This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

LANE MEDICAL LIBRARY STANFORD
T71 .W74 1868 STOR
On diseases of the skin : a system of cu
24503366808

LANE
MEDICAL LIBRARY
SEAL OF THE LELAND STANFORD JUNIOR UNIVERSITY
SEMPER VIRENS
1885
LEVI COOPER LANE FUND

ON

DISEASES OF THE SKIN.

PLATES

TO

"WILSON ON DISEASES OF THE SKIN."

FOR SALE SEPARATE,

A SERIES OF PLATES ILLUSTRATING THE PRESENT WORK,

CONSISTING OF

TWENTY BEAUTIFULLY EXECUTED PLATES,

OF WHICH

THIRTEEN ARE EXQUISITELY COLORED,

PRESENTING THE NORMAL ANATOMY AND PATHOLOGY OF THE SKIN, AND EMBRACING
ACCURATE COLORED REPRESENTATIONS OF NEARLY ONE HUNDRED VARIETIES OF DISEASE, MOST OF THEM THE SIZE OF NATURE.

Price, in cloth, $5 50.

To the series of plates prepared by Mr. Wilson to accompany his work on "Diseases of the Skin," and which are referred to throughout its pages, the publishers have added those prepared by him for his volume on "Syphilis and Syphilitic Eruptions." The diseases represented in these latter are treated at some length, while they form no part of the original plates. It is therefore hoped that, in rendering the series of illustrations more complete, the value of the whole has been correspondingly increased.

For beauty of drawing, and accuracy and finish of coloring, these plates are confidently presented as equal to anything of the kind as yet issued in this country.

The "Diseases of the Skin," by Mr. Erasmus Wilson, may now be regarded as the standard work in that department of medical literature. The plates by which this edition is accompanied leave nothing to be desired, so far as excellence of delineation and perfect accuracy of illustration are concerned.—*Medico-Chirurgical Review.*

Of these plates it is impossible to speak too highly. The representations of the various forms of cutaneous disease are singularly accurate, and the coloring exceeds almost anything we have met with in point of delicacy and finish.—*British and Foreign Medical Review.*

ON

DISEASES OF THE SKIN;

A SYSTEM OF

CUTANEOUS MEDICINE.

BY

ERASMUS WILSON, F.R.S.

SEVENTH AMERICAN
FROM THE
SIXTH AND REVISED ENGLISH EDITION.

WITH ILLUSTRATIONS ON WOOD.

PHILADELPHIA:
HENRY C. LEA.
1868.

PHILADELPHIA:
COLLINS, PRINTER, 706 JAYNE STREET.

DISEASES OF THE SKIN.

CHAPTER I.

ANATOMY AND PHYSIOLOGY OF THE SKIN.

THE SKIN is the exterior investment of the body, which it serves to cover and protect. It is continuous at the apertures of the internal cavities with the lining membrane of those cavities, the internal skin, or mucous membrane; and is composed essentially of two layers, the derma and epidermis.

The derma, cutis, corium, or true skin (Plate II.), is chiefly composed of white fibrous tissue; besides which it has entering into its structure, elastic or yellow fibrous tissue and smooth muscular fibre, together with bloodvessels, lymphatic vessels, and nerves. The white fibrous tissue exists most abundantly in the deeper strata of the derma, which are consequently dense, white, and coarse, while the superficial stratum is fine and spongy in texture, reddish in color, raised into minute papillæ, and endowed with an abundant supply of vessels and nerves. This peculiarity of structure of the derma has given rise to its consideration as consisting of two layers, the superficial or papillary layer, and the deep or fibrous layer.

The epidermis, cuticle, scarfskin, or scurfskin (Plate I.) is a product of the derma, which it serves to envelop and defend. That surface of the epidermis which is exposed to the influence of the atmosphere and exterior sources of injury, is hard and horny in texture; while that which lies in contact with the sensitive papillary layer of the derma is soft, and composed of newly-formed cells. Hence this membrane, like the derma, offers two strata for our observation, the outermost stratum, commonly spoken of as the epidermis, and the innermost stratum, or rete mucosum. The latter was considered and described by Malpighi as a distinct membrane, and is frequently referred to under the name of rete Malpighianum.

Besides the derma and epidermis, the skin includes certain important secreting organs, and certain appendages, which call for separate notice. The secreting organs are the sudoriparous and sebiparous glands; and the appendages, the hairs and the nails.

The DERMA OR CORIUM presents considerable variety of thickness in different parts of the body. Upon the more exposed regions, as

27007

fasciculi, which are sometimes round and sometimes flat, are intermingled in greater or less proportion with the fasciculi of the white fibrous tissue. Kölliker found small bundles of smooth muscular tissue measuring $\frac{1}{120}$ to $\frac{1}{75}$ of an inch, in connection with the hair follicles; these small bundles, which have been termed by Eylandt *arrectores pilorum*, take their origin by two or three penicillar digitations (Henle) from the upper stratum of the corium nearest the limitary membrane, and descend obliquely to the follicle of the hair, to become blended with the outermost layer of the follicle immediately below the sebiparous gland. Kölliker describes two of these muscles as appertaining to each hair-follicle, but Lister[1] finds only one, and this on the sloping side of the follicle, a position "exactly that which is best adapted for erecting, as well as protruding, the hairs." These muscles are the agents of erection of the hairs, and also of that erection of the pores of the skin termed *cutis anserina*, or goose-skin; it is not unlikely, moreover, that the excretion of the sebiparous glands may be assisted by the same agency. It may also be noted that these little muscles not only lift up the follicle and give prominence to the pore, but, taking their origin at a short distance from the pore, they at the same time depress the surface of the intermediate skin; the term *spasmus periphericus* has been, not inaptly, therefore, applied to this state of the derma. In the areola of the mamma, the bundles of smooth muscular tissue have a circular arrangement; Lister describes them in the deepest part of the corium of the areola mammæ as a "delicate, pale, reddish-yellow fasciculus, circularly arranged." Henle thought that he had seen similar muscular tissue in conjunction with the sudoriparous glands of the palm of the hand and sole of the foot, but this observation has not yet been verified, and is otherwise doubtful.

The **PAPILLARY LAYER OF THE DERMA** (Plate II. figs. 1, 2) is raised into small prominences or prolongations, which are termed *papillæ;* the general form of these papillæ is cylindrical and conical, but some are club-shaped and slightly flattened, and others spring from a short trunk in a tuft of two, to four or five, and are termed "compound," the former being "simple" papillæ. Upon the general surface of the body the papillæ are short, and exceedingly minute, but in other situations, as on the palmar surface of the hands and fingers, and on the plantar surface of the feet and toes, they are long, of comparatively large size, and very numerous; they are also long and abundant on the prolabium of the lips, on the nipples, the glans penis, glans clitoridis, and nymphæ. The longest papillæ are one-half or two-thirds longer than their breadth at the base, the shorter ones being as broad and sometimes broader than their length; on the nipple they measure $\frac{1}{10}$ to $\frac{1}{20}$ of a line, and on the matrix of the nail $\frac{1}{12}$ of a line. Weber estimates the number of papillæ in a square line of the surface of the palm of the hand at 150 to 200 simple and 81 compound papillæ. They also differ in their arrangement in the situations above cited; thus, on the general surface, they are distributed at unequal distances, singly and in groups, whereas, on the palms and soles, and on the corresponding surface of the fingers and toes, they are collected into little square clumps, containing from ten to twenty papillæ, and these little clumps are disposed in parallel rows. It is this arrangement, in rows, that gives rise to the characteristic parallel ridges and furrows which are met with on the hands and on the feet. The papillæ in these little square clumps are for the most part uniform in size and length, but every here and there one papilla may be observed which is longer than the rest. The largest papillæ of the derma are those which produce the free border of the nail; they occupy the dermal follicle of the nail, and are long and filiform. In structure, the papilla is composed of homogeneous nucleated and fibrillated areolar tissue, bounded by a structureless limitary membrane, and containing either a capillary loop (*vascular papilla*) or a nerve fibre (*nervous papilla*). Modern researches[1] have shown that the papillæ of the skin are properly divisible into vascular and nervous; that in the vascular papilla a nerve is rarely found;[2] while in the nervous papilla a capillary loop is equally absent; and that those exceptional papillæ which contain both a vessel and nerve may be regarded as the result of the fusion of two papillæ of different kinds. The nuclei or endoplasts of the homogeneous areolar tissue are oval in shape; and lie with their long axis sometimes parallel with the boundary of the papilla and sometimes horizontally; and from these nuclei are thrown off rudimentary elastic fibres which give a fibrillated character to the tissue. In the nervous papillæ, Wagner has described an oval or pine-shaped mass which occupies the centre of the papilla, and has been named, from its relation to the nerve fibre, *corpusculum tactûs;* and by Kölliker, from its situation, *axile corpuscle.* The axile corpuscle is found only in the nervous papillæ, and is composed of the same homogeneous nucleated areolar tissue as the rest of the papilla, but somewhat more dense in its nature, and having its nuclei and elastic fibres disposed transversely to the axis of the corpuscle. The axile corpuscle has been compared to the Pacinian corpuscles of the cutaneous nerves of the hand, and, like the Pacinian corpuscle, has been shown by Huxley[3] to be a development of the neurilemma of the nerve fibre; to be, in fact, the "continuation and termination" of the neurilemma of the nerve; not surrounding the cylinder of the nerve-fibre equally as in the Pacinian body, but swelling out more on one side than on the other, and extending for a greater or lesser distance beyond the end of the nerve. From the relative position of the nerve-fibre and the mass of the corpuscle, the fibre, after breaking up into its ultimate threads, has the appearance of ramifying upon the axile body, and its ultimate fibrils are gradually lost in the tissue of the corpuscle, at a greater or less distance from its extremity. Nervous papillæ, provided with an axile corpuscle, have been found principally in the hand and fingers, on the red edges of the lips, and at the point of the tongue.

---

[1] Microscopical Journal and Transactions, vol. i. 1853, p. 262.

---

[1] Wagner; Meissner; Kölliker; Huxley.

[2] Kölliker finds nerves in the vascular papillæ of the lip.

[3] On the Structure and Relation of the Corpuscula Tactûs (Tactile Corpuscles or Axile Corpuscles), and of the Pacinian Bodies. By Thomas H. Huxley, F.R.S., in the "Quarterly Journal of Microscopical Science," vol. ii. 1854.

The ARTERIES OF THE DERMA, which enter its structure through the areolæ of the under surface of the corium, divide into innumerable intermediate vessels, which form a rich capillary plexus in the texture of the superficial stratum of the derma, and in its papillary layer. In the former situation the capillary rete is horizontal, corresponding with the plane of the surface of the skin; while in the papillæ it is disposed perpendicularly to the same plane. To see the capillary plexus of the papillæ, it is necessary to examine the injected skin by means of a vertical section; but if the horizontal rete is to be observed, no section is needed. In the papillæ of some parts of the derma, the capillary vessels form simple loops, but in other papillæ they are convoluted to a greater or less extent, in proportion to the size and importance of the papillæ. (Plate II: figs. 3, 5.) The capillary rete of the horizontal stratum presents a number of circular areæ, some of which correspond with the bases of the papillæ, while the greater number occupy the walls of the follicular passages through which the sudoriferous and sebiferous ducts and hairs make their way to the surface. After a certain extent of course, the intermediate vessels unite to form the veins by which the blood circulated in the skin returns to the system.

The LYMPHATIC VESSELS probably form in the superficial stratum of the derma, a plexus, the meshes of which are interwoven with those of the capillary and nervous plexus. No lymphatics have as yet been discovered in the papillæ, nor would they be likely to perform any useful office in that situation. We once succeeded in injecting a minute lymphatic plexus in the derma of a fœtal lamb.

The NERVES OF THE DERMA, after entering the areolæ of the deeper part of the corium, divide into minute fasciculi, which form a terminal plexus in its upper stratum. This terminal plexus corresponds with the vascular rete, and from it are given off the primitive nerve-fibres, which enter the papillæ, and terminate in the axile corpuscles. The belief has long prevailed, that the distribution of the nerve-fibres in the papillæ takes place by means of loops, but more careful research throws doubt over this mode of termination. Huxley,[1] who has seen such loops in the cutaneous papillæ of fishes, observes, "I have never been able to convince myself of their presence (in man); and frequently when I believed I had such cases before my eyes, the use of a higher power, or the causing the papillæ to turn a little, would undeceive me. On the other hand, it is by no means difficult to obtain the clearest possible evidence of the occurrence of the so-called free ends." According to the same observer, the termination of the nerves takes place "by one or two pointed extremities, which appear to be continuous with the tissue of the corpuscle." As already stated, nerve-fibres are chiefly found in the non-vascular nervous papillæ, and are constantly associated with the axile corpuscle, the corpusculum tactûs.

The nerves of the derma, previously to reaching the base of the corium, and while yet imbedded in the subcutaneous areolar tissue, are remarkable for the presence, on their smaller twigs, of minute, oval-shaped, glistening bodies, first described by Pacini, and thence named Pacinian corpuscles. The Pacinian corpuscles have been chiefly found in the most sensitive parts of the skin, as the palm of the hand and sole of the foot, and especially in the pulps of the fingers; and it has been calculated, that in the palm of the hand and palmar surface of the fingers there exist about six hundred of these bodies. They vary in size from half a line to three lines in length; and, clustered around the small twigs of the nerves, have very much the appearance of buds upon the branch of a tree. The Pacinian bodies are commonly described as composed of from twenty to sixty concentric layers or capsules of areolar tissue, having between them as many spaces, which contain a serous fluid, and in the centre an oval-shaped cavity, also containing fluid and the axis cylinder of a nerve-fibre denuded of its medulla and sheath, and terminating by a small round tubercle, or by a bifid or trifid extremity. Huxley, however, who confirms the analogy subsisting between the axile corpuscles and the Pacinian bodies, observes: that there are no spaces filled with fluid between the capsules; that the so-called capsules or layers are united by a transparent glanular, or fibrillated substance; that there is no central cavity, but a central solid homogeneous substance, which envelops the nerve fibre, and in which the nerve-fibre ends; that the appearance of concentric capsules is produced by the parallel arrangement of the nuclei of the connective tissue and their elastic fibres; that, in a word, the Pacinian bodies are nothing more than thickened processes of the neurilemma of the nerve, and differ from the tactile corpuscles only in the degree of thickening and manner of disposition of the neurilemma.

---

[1] Loc. citat.

Recognizing, therefore, the analogy of the Pacinian corpuscle with the axile corpuscle of the papilla, and observing that both exist in the most sensitive parts of the skin, and notably in parts where a special tact is resident, we are led to the conclusion, that they perform an important part in connection with the sense of touch; and this conclusion is borne out by tracing the progressive development of similar cutaneous organs in other animals. For example, the corpuscles described by Savi, in the skin of the torpedo, consist of a pedunculated capsule of homogeneous connective tissue, containing a clear gelatinous substance, and at the junction of the peduncle a small prominence, in which are found a vessel and the termination of a nerve. Now, the analogy of this organ with a Pacinian body is clear enough; but if, as Huxley remarks, a hair be produced on this vascular and nervous prominence, and this hair issue from the opposite pole of the capsule, the hair would be a sensitive vibrissa, the most fully developed form of this series of cutaneous organs. While, if the Savian corpuscle be supposed to be magnified in size, it would represent an eyeball, one of the highest organs of sense, of which the capsule is the sclerotic coat, the gelatinous substance the vitreous humor, and the prominence of the peduncle the point of penetration of the optic nerve and the vessels of the retina. A similar analogy may be traced with the organ of hearing; and all the organs of sense may thus be shown to be developed according to one simple and primitive plan, of which the nervous papilla of the derma, with its axile corpuscle, may be taken as the type.

The EPIDERMIS (Plate I.) is a membrane of defence spread out upon the surface of the derma. As we have previously observed, this membrane presents a difference of density according as it is viewed from its outer or its inner surface; the outer or free surface being dense and horny, the inner or attached surface being soft and composed of cells. Moreover, the epidermis is laminated in structure, the laminæ presenting a progressively increasing density, as they advance from the inner to the outer surface. This difference in density is dependent on the mode of growth of the epidermis; for, as the external surface is constantly subjected to destruction by attrition and chemical action, so the membrane is continually reproduced by its internal surface, new layers being successively formed upon the derma, to take the place of the old.

Examined with the aid of the higher powers of the microscope, the under surface of the rete mucosum presents the appearance of an irregular mosaic composed of elements of four different kinds, namely: *granules*, measuring about $\frac{1}{20000}$ of an inch in diameter; *aggregated granules*, measuring about $\frac{1}{10000}$; *nucleated granules*, measuring $\frac{1}{8000}$ to $\frac{1}{4000}$; and *cells*, measuring $\frac{1}{3000}$ to $\frac{1}{2500}$ of an inch. (Plate I. fig. 8.).

The *granules* are globular in form, homogeneous, solid, brightly illumined by transmitted light when the centre is under the focus of the microscope, but dark when viewed upon the surface, the darkness being increased whenever they are congregated in clusters.

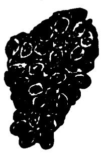
The *aggregated granules*, measuring about $\frac{1}{10000}$ of an inch in diameter, are minute masses, composed of four, five, or six of the preceding, or as many as can be aggregated without leaving an unoccupied space in the centre of the mass. With an imperfect focus, these granules have the appearance of possessing a transparent globular nucleus; but this appearance ceases when the focus is perfect, and then the component granules are quite obvious, and the centre becomes a dark point, namely, the shadow caused by the meeting of the primitive granules.

The *nucleated granules*, measuring between $\frac{1}{8000}$ and $\frac{1}{4000}$ of an inch in diameter, are in point of construction an "aggregated granule," with a single layer of aggregated granules arranged around it, so as to give the entire mass a circular or oval form. The central "aggregated granule" is the nucleus, and affords evidence, by an increase of density of its component granules, and their partial separation by interstitial substance, of more complete maturity than the aggregated granules which immediately surround it. The interstitial substance, which is transparent and homogeneous, sometimes presses the granules equally on all sides, constituting a circular nucleus; but more frequently two opposite granules are more widely separated than the rest, and the nucleus receives an elongated form. The interstitial substance is most conspicuous at the line of junction of the nucleus with the secondary tier of "aggregated granules," and in this situation gives a defined character to the nucleus. Close observation and a perfect focus render it quite obvious that the peripheral tier of granules are in reality aggregated. They are lighter than the shaded granules of the nucleus, and apparently softer in texture. The nucleated granules are more or less flattened in their form, and present a flat surface of contact with the derma; the latter circumstance gives the facility of determining their mode of construction.

The *cells* of the deep stratum of the epidermis, measuring $\frac{1}{1000}$ to $\frac{1}{2500}$ of an inch in their longer diameter, are the most striking feature of this layer, and may be said to be its chief constituent. They originate, as is evident by their structure, in the nucleated granules previously described, and consist of a transparent layer added to the exterior of the former. Or, if we may describe them as they appear in their tesselated position, they are constituted by the addition of a transparent border to the last described nucleated granule. The periphery of this transparent border is bounded by a dark interstitial substance, which gives the border a defined outline, and in the latter situation the cell-membrane probably exists, or is subsequently developed, for the difficulty of isolating these cells, and their roughness of outline when separated, seem to prove that if a membrane be really present, it must be exceedingly thin and easily torn. Assuming, therefore, from analogy rather than from demonstrative proof, that there exists a boundary membrane to the bodies we are now describing, we have termed them "cells;" the cavity of the cell we apprehend to be "the transparent border;" the "nucleated granule" is the *nucleus* of the cell; the "aggregated granule" of the latter the *nucleolus;* and the entire body a "nucleolo-nucleated cell." Again, the "transparent border" just described is a tier of "aggregated granules;" the nucleolus, therefore, is an "aggregated granule," the nucleus a tier (taking its flat surface) of aggregated granules surrounding the former, and the cell-chamber a tier of aggregated granules inclosing the whole.

The largest of the pieces composing the mosaic-like plane of the under-surface of the epidermis are the nucleolo-nucleated cells. These are placed without order; in some parts closely pressed together, in others at short distances apart, and here and there leaving interspaces between them equal to the breadth of the cells. The interspaces or intercellular spaces are occupied by the "nucleated granules," "aggregated granules," and "primitive granules," irregularly set in a homogeneous interstitial substance, which fills up all vacuities. The granules and interstitial substance modify the light transmitted through them variously at different foci of the microscope; sometimes the granules look dark, while the interstitial substance is light, and sometimes the reverse is the case. The process of development appears to consist in the successive production of granules, one layer of granules succeeding another, so that, if the organizable principle exist in each separate granule, the organizable force may be supposed to

Fig. A.



The under surface of the epidermis, showing the mosaic-like appearance of its newly-formed layer.

be more and more weakened in successive formations until the moment arrives when it ceases entirely, and the cell is complete.

Admitting the nucleolo-nucleated bodies now described to be cells in their earliest state of formation, their size is $\frac{1}{3000}$ to $\frac{1}{2500}$ of an inch in the long diameter, and that of their nucleus from $\frac{1}{6000}$ to $\frac{1}{4000}$ of an inch. In the stratum immediately above the deepest layer we find cells measuring $\frac{1}{2000}$ of an inch, with nuclei of $\frac{1}{4500}$. Above these, cells measuring $\frac{1}{1800}$, with nuclei varying from $\frac{1}{4000}$ to $\frac{1}{3000}$, and above the latter, cells measuring $\frac{1}{1500}$, with nuclei of $\frac{1}{2500}$. In following the layers of epidermis upwards to the surface, cells may be observed possessing every intermediate degree of size between the last-named cell, namely $\frac{1}{1500}$ and $\frac{1}{800}$, which is the measurement of the scales which constitute the uppermost stratum of the epidermis. It must not be supposed, however, that the growth of the epidermal cell reaches its maximum only at the surface; we have found cells of that magnitude in the deeper strata, and there is every indication of the growth of these cells being completed in the stratum immediately above the mosaic-like layer.

Young cells are remarkable for the large size of the nucleus as compared with the entire bulk of the cell, and it is quite evident also that the nuclei, up to a certain point, grow with the cells; their mode of growth appearing to be the separation of the original granules by the deposition between them of interstitial matter, and the cleavage and consequent multiplication of the granules; in cells measuring $\frac{1}{3000}$ and $\frac{1}{1800}$ of an inch, the granular character of the nucleus was very manifest. Besides growth, it is apparent that other changes are taking place in the nucleus; imbibition and assimilation of organizable material must necessarily be in action in order to accomplish the formation of interstitial matter; but, in addition to this, the central granules undergo another change, by which they are altered in character, and become distinguished from the rest when submitted to chemical experiment. For example, when diluted acetic acid is added to the cells measuring $\frac{1}{2000}$ of an inch and less, the entire nucleus is rendered transparent and less discernible than before; but when cells of a somewhat larger size, and consequently larger growth, are submitted to the same process, the nucleus is rendered much more distinct than it was previously. But the body which is made so conspicuous in this latter experiment is not the entire nucleus, but simply the central and older granules of the nucleus; the younger granules retain the character of those of the young cells; they are made more transparent than they were before, and have faded from sight. It may also be observed, that the nucleus brought into view by the acetic acid is more or less irregular in form, and has the appearance of being composed of an aggregation of granules.

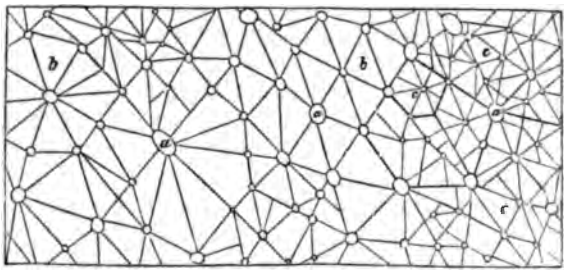
In reference to the growth of the cells, we have remarked, in an earlier paragraph, that the formation of the young cell appears to be due to the development of a stratum of "aggregated granules" externally to the nucleated mass which we have described as the cell-nucleus. Now, nothing is more certain than that the growth of the cell is due to a successive repetition of this process; the growth of the

It follows, from a review of the structure of the epidermis, that this membrane is accurately modelled on the papillary layer, that each papilla finds its appropriate sheath in the newly-formed epidermis or rete mucosum, and that each irregularity of surface of the former has its representative in the soft tissue of the deep layers of the latter. (Plate I. figs. 2, 5.) It is not, however, the same with the external surface of the epidermis; this is modified by attrition and exposure to chemical and physical influence; the minute elevations, corresponding with the papillæ, are, as it were, polished down, and the surface is consequently rendered smooth and uniform. The palmar and plantar surface of the hands and feet are an exception to this rule, for in these situations, in consequence of the large size of the papillæ, and their peculiar arrangement in rows, ridges corresponding with the papillæ are strongly marked on the superficial surface of the epidermis. (Plate I. fig. 1.) Moreover, upon the borders of the fingers, where the linear-disposed and magnified papillæ of the palmar surface gradually pass into the irregular and minute papillæ of the dorsal surface, a transition state of the epidermis may usually be observed.

Besides the form bestowed upon the epidermis by its relation with the derma, its degree of thickness will be found to be dependent upon the same source, and to bear an accurate proportion to the degree of development of the papillæ. Thus, on the palm[1] of the hands, where the papillæ are large, the epidermis is thick; while on the back of those organs, or on the scalp, where the papillæ are small, it is comparatively thin.

Another character presented by the epidermis is also to be considered as the consequence of its connection with and dependence on the derma, namely, the network of linear furrows, which everywhere intersect each other, and trace out the surface into small polygonal and lozenge-shaped areæ. These lines correspond with the folds of the derma produced by its movements, and are most numerous where those movements are greatest, as in the flexures, and on the convexities of joints. Some difference is perceived in the form of the areæ,

Fig. B.



---

[1] In an individual not exposed to much manual labor, we found the epidermis in the palm of the hand to measure one-fourth of a line in thickness. The horny covering of the foot of the dog is produced by papillæ of unusually large size, and highly vascular.

when examined in these two situations; thus, in the flexures of the joints they are narrow and long, and, for the most part, lozenge-shaped in their figure, while on the convexities of joints, as upon the elbow and knee, the areæ are large, and more nearly quadrangular. The furrows of the epidermis admit of a division into two kinds, namely, those which correspond with joints, and bear relation to the movements of the body and limbs, and those which belong especially to the movements of the skin. The first or larger kind are those which are so perceptible on the flexures and convexities of joints, and on the palm of the hand and the sole of the foot. The latter or smaller occupy the interspaces of the former, and those parts of the surface where the furrows of articular motion have no existence. Their plan of arrangement is as follows: from each of the hair-pores (*a, a*) there pass off on all sides, like rays from a centre, from six to ten lines, which meet by their extremities lines proceeding from other pores. These lines mark out the surface into small triangular spaces (*b, b*), or areæ, within which are other and more minute pores, probably perspiratory pores. From the latter a similar number of radiating lines are given off, and abut against the coarser lines, dividing the surface into smaller triangular areæ (*c, c*), and giving to the entire network the appearance of a number of nicely-adjusted angular wheels. On the shoulder of a child of about five years of age, we counted sixty of the hair-pores with the wheel-like rays within the limit of a square inch; while between these larger pores were six hundred smaller pores, constituting so many secondary centres and secondary wheels, and forming an elegant mosaic pattern. On the scalp the furrows run between the hair-pores, and the included areæ are more open than on the general surface of the skin. The minuter lines of motion of the skin may possibly be produced by the action of the arrectores pili muscles.

The deeper tint and color of the skin observable among the nations of the South, and in certain regions of the skin of fairer races, is due to the presence of pigment granules in the cells of the epidermis. The pigment-bearing cells are most abundant in the furrows of the derma, and in the hollows between the papillæ. The production of pigment granules is not, however, limited to the horizontal stratum of the derma; they are also met with in the various inflexions of the epidermis, constituting the lining of the sudoriparous and sebiparous glands, and hair-follicles. It is in consequence of the presence of these granules in the cells composing these inflections that we are enabled to perceive the organs to which they belong with greater facility; and, for the same reason, we discover pigment granules in the perspiratory and sebaceous secretions.

The chemical composition of the pigment of the skin may be inferred from the analysis of the pigmentum nigrum oculi made by Scherer.[1] The principal elementary substances composing this pigment, and also composing the epidermis, were found in the following proportions:—

---

[1] Liebig, Organic Chemistry.

	Pigment.	Epidermis.
Carbon	58.27	50.34
Hydrogen	5.97	6.81
Nitrogen	13.76	17.22
Oxygen	21.98	25.63

The proximate composition of the epidermis, according to an analysis by John, is as follows :—

Hardened albumen	93.0 to 95.0
Gelatinous matter	5.0 "
Fat	0.5 "
Lactic acid ; salts and oxides	1.0 "

The salts are, lactate, phosphate, and sulphate of potash ; sulphate and phosphate of lime; and sulphate and phosphate of ammonia; the oxides, those of manganese and iron.

The identity of structure of the external tegument or skin, with the internal tegument or mucous membrane, has long been established. In both the same parts are found, and each is continuous with the other. Bowman directs our notice[1] to this fact, and adduces another point of similitude between these membranes. He finds beneath the epithelium of mucous membranes on the one hand, and in contact with the vessels of the parenchyma on the other, "a simple, homogeneous expansion, transparent, colorless, and of extreme tenuity;" this delicate expansion serves as a foundation on which the epithelium rests; and in accordance with this view he terms it the "*basement membrane.*" It is, in fact, the boundary layer of all vascular membranes, and as such is met with in serous as well as in mucous structures. The extreme tenuity of the basement membrane may be inferred from the measurements instituted by Bowman; in the uriniparous tubuli its thickness does not exceed $\frac{1}{20000}$ of an inch; in the seminiparous tubuli $\frac{1}{10000}$ of an inch; in the lungs, it constitutes almost the entire thickness of the air-cells; and in no situation has it been found to exceed $\frac{1}{8000}$ of an inch. Reasoning from analogy, he infers the existence of a corresponding membrane on the surface of the derma, but finds it difficult to demonstrate, in consequence of its close adherence to the vascular rete, and deeper seated stratum. The same difficulty exists on the general surface of the mucous membranes, and for the same reason; but, in the minute tubuli of the secreting glands, the connection between the basement membrane and the vascular rete is so slight, that they separate on the gentlest pressure. In like manner he finds no difficulty in distinguishing this membrane in the tubuli of the sudoriparous and sebiparous glands; and he remarks, that it is it which gives firmness and form to the minute tubuli of secreting glands.

SUDORIPAROUS SYSTEM.

The SUDORIPAROUS GLANDS (Plate II. fig. 3) are situated in the middle and deeper stratum of the corium, namely, at about half a line below the plane of the upper surface of the epidermis, and also in the

---

[1] Cyclopædia of Anatomy and Physiology; Article, Mucous Membrane.

On the cheeks, the back of the trunk, and thighs, he estimates the number in a square inch of surface at 400 to 600; on the rest of the trunk of the body, the forehead, neck, forearm, leg, and back of the hand and foot, at 924 to 1090; in the palm of the hand, at 2736; and in the sole of the foot, at 2685. The aggregate bulk of these organs, including those of the axilla, he states at 39,653 cubic inches.

The efferent duct and glandular tubulus of the sudoriparous gland are lined by an inflection of the epidermis. This inflection is thick and infundibuliform in the upper stratum of the derma, but soon becomes uniform and soft. The infundibuliform projection is drawn out from the duct when the epidermis is removed, and may be perceived on the under surface of the latter as a nipple-shaped cone (Plate I. fig. 2). A good view of the sudoriferous ducts is obtained by gently separating the epidermis of a portion of decomposing skin; or they may be better seen by scalding a piece of skin, and then withdrawing the epidermis from the derma. In both these cases it is the lining sheath of epidermis which is drawn out from the duct (Plate III. fig. 17). The diameter of the tubular epidermal lining of a sudoriferous duct examined in the palm of the hand was $\frac{1}{700}$ of an inch, two thirds of this diameter being constituted by the wall of the tubule, and the remaining third by its area. The parietes of the tubule were composed of two or three layers of cells, of which the most external, namely, those next the corium, measured $\frac{1}{3000}$ of an inch in diameter.

The tubule of the sudoriparous gland and that of the efferent duct into which it is prolonged are uniform in diameter, and composed of three, and, in some instances, of four coats; the three coats are, an outer fibrous coat, the limitary membrane, and an epithelial lining identical in structure with the deep layer of the rete mucosum. In certain of the glands, especially those of larger size, there is a coat of smooth muscle between the fibrous and limitary membrane, and a similar coat is found on the efferent ducts in the axillary region. In these latter, moreover, the efferent duct is sometimes seen to bifurcate, and sometimes its branches have been observed to divide dichotomously in forming the convolutions of the gland. The cavity of the tubule presents two important differences: in one it is open for the greater part or the whole of its extent, in which case the epithelial lining is distinct; in the other, the tubule is filled with epithelial contents to a greater or less degree, and there is no cavity present excepting in the efferent duct. The contents of the tubules of the smaller glands are commonly clear and aqueous, while those of the larger glands are opaque and grumous, and composed of an admixture of cells, entire and broken up, cell-nuclei, and granules, suggesting a resemblance with sebaceous substance, and the more so as there is also present protein and fat.[1] When, therefore, the tubules contain fluid only, the epithelial lining is complete; but when the contents are of the mixed character already described, the epithelial lining is more or less deficient or entirely absent; or, rather, is identified with the cellular contents. Hence the perspiration participates in the double mode of secretion common amongst glands, namely, transudation and cell elaboration.

---

[1] Kölliker.

The sudoriparous gland is inclosed in a network of capillary vessels, which in an injected preparation have an elegant and beautiful appearance; but nothing is known as to the arrangement of its nerves.

Taken separately, the little perspiratory tube, with its appended gland, is calculated to awaken in the mind very little idea of the importance of the system to which it belongs; but when the vast number of similar organs composing this system are considered, for it includes the sebiparous glands, which are also agents in perspiration, we are led to form some notion, however imperfect, of their probable influence on the health and comfort of the individual. To arrive at something like an estimate of the value of the perspiratory system in relation to the rest of the organism, we counted the perspiratory pores on the palm of the hand, and found 3528 in a square inch. Now, each of these pores being the aperture of a little tube of about a quarter of an inch long, it follows, that in a square inch of skin on the palm of the hand there exists a length of tube equal to 882 inches, or 73½ feet. On the pulps of the fingers, where the ridges of the sensitive layer of the true skin are somewhat finer than in the palm of the hand, the number of pores on a square inch a little exceeded that of the palm; and on the heel, where the ridges are coarser, the number of pores in the square inch was 2268, and the length of tube, 567 inches, or 47 feet. To obtain an estimate of the length of tube of the perspiratory system of the whole surface of the body, 2800 might be taken as a fair average of the number of pores in the square inch, and 700, consequently, of the number of inches in length. Now, the number of square inches of surface in a man of ordinary height and bulk is 2500;[1] the number of pores, therefore, 7,000,000, and the number of inches of perspiratory tube, 1,750,000, that is, 145,833 feet, or 48,600 yards, or nearly twenty-eight miles.

The development of the sudoriparous apparatus has been observed and described by Kölliker. He discovered small masses of nucleated cells resembling buds, growing from the rete mucosum into the derma, in the foot of the fœtus at the fifth month; by the sixth month, the buds, assuming the form of elongated processes with cœcal ends had reached the mid-thickness of the corium; by the end of the seventh month they had traversed the entire thickness of the corium, and were bent at the extremity, beginning to assume the convoluted arrangement they were afterwards to possess. Subsequently they pursued their progress with rapidity; continuous cell-multiplication enabled them to reach their full length; the convolutions increased until the gland was perfected; and the central cells yielding to the process of softening and liquefaction common in the formation of tubular glands, their cavity was established. So that, at the time of birth, the sudoriparous system is complete throughout the entire skin.

---

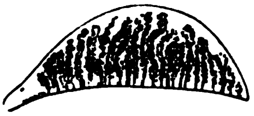
[1] Haller's estimate of the extent of surface of the body is fifteen square feet, that is, 2160 square inches.

SEBIPAROUS SYSTEM.

The SEBIPAROUS GLANDS (Plate III.) are the special producing organs of the sebaceous substance or fatty secretion of the skin; they are associated with hairs, being connected with the upper part of the hair-sacs, and like the hairs, are distributed almost universally over the surface of the body. They are situated in the corium, and are either simple follicular sacs, or are more or less subdivided into branches or lobules, so as to constitute simple racemose and compound racemose glands. Opening into the hair-sacs of the scalp there exist commonly a pair of these glands to each hair, while in the beard and axilla and on the breast there are four or five; and in the mons veneris, labia majora, and scrotum, often as many as seven or eight, which surround the neck of the hair-sac and have a radiated or rosette-like appearance. They are whitish in color, and vary in size from the five or six hundredth of an inch to a line in diameter. The racemose glands of the scalp measure between $\frac{1}{80}$ and $\frac{1}{10}$ of a line in diameter; those of the beard and axilla between $\frac{3}{10}$ and $\frac{1}{10}$ of a line; and those of the pubes, scrotum, and labia majora, a quarter of a line to one line. The largest of the sebiparous glands of the body are those of the eylids, the Meibomian glands.

The purpose of the sebiparous organs being to supply the surface of the skin with an oily secretion, they are found most abundantly in situations where such a product is chiefly required, as among the hair, to which they lend their aid in preserving its smooth and glossy appearance; on the face, and particularly its more exposed parts, as the nose; in the hollow of the folds of the body, as the axilla and pudendum; and around the apertures of junction with the mucous membrane, as along the eyelids, and at the anus. The so-called ceruminous glands of the ear-tubes have been shown by Kölliker to belong to the sudoriparous system; they are not the producers of the cerumen, or ear wax, which is a sebaceous matter secreted by sebiparous glands, the latter being as abundant in the meatus auditorius as elsewhere.

FIG. D.



Meibomian glands; natural size; imbedded in the cartilage of the upper eyelid.

In structure, a sebiparous gland is composed of a fibrous membrane, consisting of areolar or connective tissue; a middle coat derived from the limitary layer; and an internal epithelial lining of nucleated cells, which is continuous through its excretory duct with the outer root-sheath of the hair-sac, or with the rete mucosum. The excretory or sebiferous duct is the medium of communication between the gland and the hair-sac, and its epithelial lining consists of several layers; but in the subdivisions of the gland these layers are reduced in number, until in the glandular vesicles of the periphery there remains only a single layer. Within the cavity of the gland is found a grumous pulp, more or less fluid, consisting of cells containing a yellowish and transparent homogeneous substance, others containing small globules of oil, and others again filled with oil; this, with some free oil and watery fluid, is the sebaceous secretion. It is not a fluid secretion, but a cellular secretion. In chemical composition the sebaceous substance, according to Esenbeck, consists of fat, albumen with casein, extractive matter, and phosphate of lime, in nearly equal proportions.

The sebiparous glands have no special supply of capillary vessels, as have the sudoriparous glands; the vessels are distributed like those of the hair follicles, and nothing is known as to their nerves.

Development of the sebiparous glands takes place from the hair-sacs between the fourth and fifth month of fœtal existence, and follows the order of formation of the hairs, beginning with the eyebrows. The first trace of the future gland is a bud-like prominence of the neck of the hair-sac, derived from and consisting of nucleated cells identical with those of the outer root sheath; the bud elongates, and either remains single or divides, and by the same process of budding its division continues until the entire gland is completed. This completion does not always take place at once, but the process may cease for a time and subsequently be resumed; hence, it is continued after birth and during the growth of the body, or may be set up in after life as a pathological action. At about the sixth month a difference of character is observed between the cells of the periphery of the newly-formed gland and those of the centre; the latter become darker colored, and are found to contain globules of oil; this is the sebaceous secretion. The process of separation of the cells commences at the distal part of the gland, and gradually moves onward to the excretory duct, until it reaches the hair-sac; and its secretion-cells are poured out into the hair-sac to be distributed on the surface of the skin. The growth of the glands, as well as the formation of the secretion, is a process of cell multiplication, the production of a succession of new cells out of the elements of the older or parent cells.

HAIRS.

Hairs (Plate IV.) are horny filaments, appertaining to the structure of the skin, and distributed more or less extensively and abundantly over its surface. Every part of the cutaneous surface is organized for the production of hair, with the exception of the palm of the hands, the sole of the feet, the dorsum of the ungual phalanges both of the hands and feet, and the upper eyelids. They are abundant on the head, on the face, in the axillæ, on the pubes, and less numerously dispersed over the trunk of the body and limbs, and they present certain special characters, such as shape, size, length, color, quantity, and structure, which call for separate consideration. We have also to pass in review their mode of growth, their development, and their physiological dependence on the rest of the organism.

A hair admits of a natural division, into a middle portion or shaft (scapus), and two extremities; a peripheral extremity, the point; and a central extremity inclosed within the follicle, the root. The root is somewhat thicker than the shaft, and cylindrical in figure, while its extremity is expanded into a spherical or oval mass twice or three times the thickness of the shaft, the bulb.

The shaft of the hair is rarely perfectly cylindrical; it is more or less compressed or flattened, and oval or fabiform in section. Leeuwenhoeck observes with regard to the shape of the hair, "quot crines, tot figuræ." This, however, is not strictly true, for the typical figure of the shaft of the hair is cylindrical; and the aberrations from that type are a greater or lesser degree of flattening in consequence of desiccation by the air of the part of the shaft which has escaped from the follicle. Flattening of the shaft gives rise to waving and curling hair; and in hair which is much curled the flattening is more or less spiral in direction.

Hairs are divisible into two primary groups, long and short; but each of these groups admits of division into two sub-groups, namely, 1. Long and soft hairs, of which the hairs of the head are the type; 2. Long and stiff hairs, which include the hair of the beard, whiskers, trunk, pubes, and axillæ; 3. Short and stiff hairs, such as those of the eyebrows, the eyelashes, the vibrissæ nasi, and the hairs of the meatus auditorius; and, 4. Short and fine hairs, including the downy hairs (lanugo), and those of the caruncula lachrymalis.

The hairs of the head offer much variety in point of size. For example: in 2000 hairs, taken from 38 persons, the finest ranged between $\frac{1}{1500}$ and $\frac{1}{500}$ of an inch; the former of these occurring in three instances, one in black, the others in brown hair, the subjects of the observation being adult men; the latter in seven persons, two men with black hair, and five women, four with brown and one with chestnut hair. The coarsest hair in the same heads ranged between $\frac{1}{400}$ and $\frac{1}{140}$ of an inch, the former being the flaxen hair of a female child, and the latter, a brown hair from the head of a female adult. In three South American Indians, a man, a young woman, and a child, the finest hair occurred in the child ($\frac{1}{1000}$ of an inch), next in the man ($\frac{1}{500}$), and lastly in the women ($\frac{1}{450}$). The coarsest hairs of the same individuals were $\frac{1}{240}$ of an inch in the man and woman, and $\frac{1}{210}$ in the child. The color of the hair in the two former was black, and that of the child red. In a New Zealand chief, the finest of fifty hairs measured $\frac{1}{450}$, and the coarsest $\frac{1}{200}$ of an inch. The influence of a morbid habit on the hair is shown in the instance of a scrofulous female child; of ninety-seven of the flaxen hairs of this child, the finest measured $\frac{1}{1750}$, and the coarsest $\frac{1}{450}$ of an inch. For convenience of reference, we have arranged these measurements in a tabular form, as follows:—

	Number of hairs examined.		Finest.		Coarsest.
British	2000[1]	...	$\frac{1}{1500}-\frac{1}{500}$	...	$\frac{1}{400}-\frac{1}{140}$
South American Indians .	155	...	$\frac{1}{1000}-\frac{1}{450}$	...	$\frac{1}{240}-\frac{1}{210}$
New Zealander . . .	50	...	$\frac{1}{450}$	...	$\frac{1}{200}$
Scrofulous child . . .	97	...	$\frac{1}{1750}$	...	$\frac{1}{450}$

The average thickness of the 2000 hairs above examined ranged between $\frac{1}{550}$ of an inch, the flaxen hair of a female child, and $\frac{1}{250}$ of inch, the brown hair of an adult woman. The average thickness of the hairs of the three South American Indians was $\frac{1}{450}$ of an inch in the child, $\frac{1}{350}$ in the woman, and $\frac{1}{300}$ in the man. The average measurement of the hair of the New Zealand chief was $\frac{1}{350}$, and that of the scrofulous child, $\frac{1}{600}$ of an inch. In a tabular form, these measurements would stand as follow:—

---

[1] The measurements were in all cases made as close to the head as possible, to avoid the influence of stretching and wear.

British	$\frac{1}{550}$ to $\frac{1}{250}$
South American Indians	$\frac{1}{450}$ to $\frac{1}{300}$
New Zealander	$\frac{1}{350}$
Scrofulous child	$\frac{1}{600}$

The average dimension in thickness of human hair, according to the above table, is $\frac{1}{400}$ of an inch. Leeuwenhoeck and Rosenmüller state it to be $\frac{1}{600}$ of a Paris inch,[1] which is certainly too little; while Weber approaches more nearly to the measurements given above, as may be seen by the following table:—

His own hair	$\frac{1}{155}$ to $\frac{1}{370}$	Paris inch.
Mulatto	$\frac{1}{450}$ to $\frac{1}{279}$	"
Senegambian negro, woolly	$\frac{1}{714}$ to $\frac{1}{303}$	"
Nubian negress	$\frac{1}{525}$ to $\frac{1}{294}$	"

Rosenmüller's table is as follows:—

Adult	$\frac{1}{600}$ to $\frac{1}{400}$	Paris inch.
Child	$\frac{1}{800}$ to $\frac{1}{700}$	"
Lanugo from body of fœtus	$\frac{1}{1600}$	"

It is probable that these writers deduce their average from extremes of measurement, a proceeding that must necessarily lead to error. A correct average can only be obtained by ascertaining the medium range, and deducing the average from that range.

With respect to the influence of age and sex upon the thickness of the hair, our observations are in favor of the coarsest hair being found in the female, and the finest in the male; and of the hair of children being finer than that of the adult, thus:—

	Number of heads.	Number of hairs.	Range of thickness.
Child	6	269	$\frac{1}{550}-\frac{1}{400}$
Man	18	1016	$\frac{1}{525}-\frac{1}{300}$
Woman	18	940	$\frac{1}{500}-\frac{1}{250}$

This is the reverse of what might have been anticipated; we should certainly have looked for a coarser hair in the male than in the female, for, independently of sex, the habit of cutting the hair closely might have been expected to conduce to its greater strength. Indeed, in one of the cases examined, the head had been repeatedly shaven with a view to render the growth of the hair strong, but the hair did not exceed the medium average of size.

The variety in the thickness of the hairs of the same head is very considerable, as may be perceived in the following instances, taken without a selection from a number of observations:—

[1] A Paris inch is $\frac{1}{13}$ longer than an English inch.

Number of hairs.		Finest.		Coarsest.		Medium range.		Average.
67	...	$\frac{1}{1500}$	...	$\frac{1}{230}$	...	$\frac{1}{250} - \frac{1}{550}$	...	$\frac{1}{450}$
81	...	$\frac{1}{1500}$	...	$\frac{1}{300}$	...	$\frac{1}{350} - \frac{1}{600}$	...	$\frac{1}{400}$
79	...	$\frac{1}{1250}$	...	$\frac{1}{230}$	...	$\frac{1}{350} - \frac{1}{750}$	...	$\frac{1}{450}$
97	...	$\frac{1}{750}$	...	$\frac{1}{250}$	...	$\frac{1}{300} - \frac{1}{350}$	...	$\frac{1}{400}$
57	...	$\frac{1}{350}$	...	$\frac{1}{210}$	...	$\frac{1}{230} - \frac{1}{270}$	...	$\frac{1}{250}$
64	...	$\frac{1}{500}$	...	$\frac{1}{240}$	...	$\frac{1}{300} - \frac{1}{400}$	...	$\frac{1}{400}$

The "medium range" in this table includes the measurements within which the greatest number of hairs are found, and from it the average is deduced.

Variety in thickness is not, however, confined to the different hairs of a single head; it is met with even in an individual hair. Thus, a hair six inches long, and apparently of uniform dimensions, ranged between $\frac{1}{500}$ and $\frac{1}{320}$ of an inch at various points of its length; another ranged between $\frac{1}{400}$ and $\frac{1}{190}$; while a white hair, which was obviously enlarged at short distances, presented a range of $\frac{1}{430}$ to $\frac{1}{230}$, the diameter of its point measuring $\frac{1}{3000}$ of an inch. The short hairs of the body not unfrequently exhibit an appearance which may be termed varicose. In the instance of the long hairs of the head a small share of the difference of diameter may be referred to overstretching in dressing the hair, but this cause cannot apply in the case of the varicose hairs. It has been shown by experiment that hair is so elastic that nothing but inordinate stretching could occasion the permanent constrictions to which our admeasurements refer. Weber found a hair ten inches long stretch to thirteen inches; and a hair stretched one-fifth returned to within one-seventeenth of its original length.

With respect to color as a condition associated with diversity in thickness, our observations tend to show that flaxen is the finest, and black the coarsest hair. Gray hairs commonly represent in thickness the color which they succeed; but as a general rule, the white hairs which intrude themselves as age advances, are coarser than the hairs among which they are found, suggesting the inference, that deficiency of pigmentary is compensated by excess of albuminous principle.

The most extensive range in thickness is enjoyed by light brown hair. The average measurements of hairs of different colors are as follows; corresponding pretty closely with those of Whithof.

Flaxen	$\frac{1}{550}$ to $\frac{1}{400}$ of an inch.
Chestnut	$\frac{1}{525}$ to $\frac{1}{350}$ "
Red	$\frac{1}{450}$ to $\frac{1}{400}$ "
Dark brown	$\frac{1}{500}$ to $\frac{1}{300}$ "
Light brown	$\frac{1}{500}$ to $\frac{1}{250}$ "
White	$\frac{1}{450}$ to $\frac{1}{300}$ "
Black	$\frac{1}{400}$ to $\frac{1}{350}$ "

The hairs of different regions of the body of the same individual necessarily present some degree of variety of diameter; but the amount of variation is less than might have been anticipated, as may be seen by the following table, in which the average term is employed. The diameter of the hair of the head is given in the first line as a standard of comparison.

	Man, chestnut.	Man, black.	Man, brown.	Woman brown.
Head	$\frac{1}{525}$	$\frac{1}{320}$	$\frac{1}{400}$	$\frac{1}{250}$
Beard	$\frac{1}{200}$	$\frac{1}{200}$	—	—
Eyebrow	$\frac{1}{250}$	—	$\frac{1}{300}$	—
Pubes	$\frac{1}{300}$	$\frac{1}{250}$	—	$\frac{1}{200}$
Breast	—	$\frac{1}{250}$	$\frac{1}{400}$	$\frac{1}{400}$
Whiskers	$\frac{1}{300}$	$\frac{1}{200}$	—	—
Eyelashes	—	$\frac{1}{300}$	—	—
Axilla	$\frac{1}{450}$	$\frac{1}{300}$	—	$\frac{1}{300}$
Thigh	—	$\frac{1}{400}$	—	—
Leg	$\frac{1}{500}$	$\frac{1}{450}$	—	—
Vibrissæ auris	$\frac{1}{1250}$	—	—	—

Upon the greater part of the body the hairs are very minute (downy hairs, lanugo), and in many situations are not apparent above the level of the skin; in others, as upon the outer side of the limbs, and upon the trunk, they attain a certain length; and, upon the head, face, pubes, perinæum, axillæ, and around the nipple, their length is considerable. When left to its full growth, as in the female, the hair of the head attains a length of from twenty inches to a yard, the latter being regarded as unusually long; but in an instance that lately came under our notice, the hair measured six feet. The hair is known, besides, to constitute a sexual character, appearing for the first time on certain parts of the body at the period of puberty, and occurring on regions of the body of the male where it is generally imperceptible in the female, as upon the sides of the face, the chin, the breast, the shoulders, the back, and the abdomen.

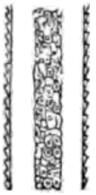
The free extremity or point of a hair is conical, and more or less sharp. When examined in one of the minute or downy hairs which has not risen above the level of the surface, the point appears obtuse, on account of its little difference in diameter from that of the shaft (Plate III. fig. 18). In the short hairs of the body, and in those of the head, on the other hand, the point is apparently sharper, from the greater relative size of the shaft, and actually so as a consequence of desiccation. The pointed character of a hair is very perceptible in the eyebrows and eyelashes, as also in the vibrissæ of the nose and meatus auditorius. When the hair has been cut, its pointed figure is necessarily lost. Sometimes, however, there is an appearance of pointing, the combined result of attrition and desiccation. But the more usual character, when the hair has been long neglected, is a splitting of the end into two or three filaments.

The root of a hair, or that part which is included within the skin, inclosed in the hair-sac or follicle, is somewhat greater in diameter than the rest of the shaft, in consequence of being nearer the source of the nutritive fluids, and protected from evaporation; and for the same reasons it is cylindrical in form, while at its lower part the root expands into an oval-shaped mass, the bulb, which occupies the whole breadth of the follicle, and is implanted on a small elongated papilla, derived from the derma at the fundus of the follicle, the papilla of the hair. When a hair is cast, no trace of the bulb is perceptible, because the soft cells of which the latter is composed are dried up, and only those cells remain which have undergone transformation into the horny fibres of the hair. In this state the root of the hair is pointed, and resembles an old paint-brush worn to a conical stump (Plate III. fig. 18). But when a hair is torn out by force, its root presents a variety of appearances, dependent on the removal with it of more or less of the epidermal lining of the follicle, the root-sheath. Sometimes this follicular root-sheath is collected in a mass at the extremity of the hair, and the latter appears, in consequence, to be bulbous. Sometimes the epidermal sheath is drawn to a greater or less extent beyond the root, and then according as it may be straight or curved in direction, the root has the appearance of being pointed or uncinated.

In structure, a hair is composed of three different modifications of cell-tissue (Plate IV. fig. 3), namely, a loose cellulated substance which occupies its centre, and constitutes the medulla or pith; a fibrous tissue, which incloses the preceding, and forms the chief bulk of human hair; and a thin layer, the so-called cuticle, which envelops the fibrous structure, and forms the smooth external surface of the hair.

The medulla is absent in the minute or downy hairs, and is not unfrequently absent or small in quantity in fine hairs, from whatever region they may be selected. In the coarser hairs of the head and body, on the other hand, it is always present, and is especially remarkable in white hair. It varies in breadth from a mere line to a cylindrical body of one-third the diameter of the hair (fig. E.), and is composed of large nucleated cells, of a globular or oval figure, filled with granules, and packed together, apparently without order. When newly formed, these cells, with their granules, are distended with fluid, but in the shaft of the hair the cells frequently contain air, which, from its highly refractive powers, gives the medulla a dark appearance when examined with the microscope. Varieties in structure of the hair are unusual; we have, however, once observed the presence of two medullæ. The displacement of the medulla nearer to one side of the periphery of the hair than to the other, in the short and thick hairs of the body, is not so uncommon.

Fig. E.

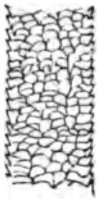


The middle or fibrous layer of the hair is composed of oval-shaped cells, closely packed together, and arranged in a linear order. These cells are identical in structure with the cells of the deep stratum of the epidermis, that is to say, they are composed of granules congregated around a central granule which constitutes the nucleus of the cell. When examined with the microscope, it is not in all cases easy to discover the cells, but their component granules are always obvious, and from the plan of disposition of the cells, and their oblong shape, the granules have a linear arrangement, and assume the character of fibres. The hair-fibres offer some variety of appearance, according to the focus in which they are viewed. For example, with a superficial focus, the peripheral granules are alone seen, and the hair appears to be entirely composed of granules arranged in single rows. With a deeper focus, the rows of granules appear to be associated in pairs, each pair having between them an unconnected row of dark and apparently nuclear granules. In this view the fibres resemble a chain composed of open links. While, with a still deeper focus, the centre of the cell, with its nucleus and granular periphery, is brought into view. In different hairs these three appearances are seen with various degrees of distinctness.

The color of hair appears to reside partly in the granules and partly in an intergranular pigmentary substance which occupies the interstices of the granules and of the fibres. The most deeply-colored granules are those which constitute the nuclei of the cells, and in the lighter hairs these alone give color to the fibrous structure. In the darker hairs more or less of the peripheral granules are also colored, and pigment may be observed in greater or less abundance in the interfibrous spaces. With respect to the granules, the pigment appears to occupy their periphery, sometimes surrounding them completely, and sometimes occupying a portion only of their surface In the peripheral granules of the cells, the outer segment is the more frequent seat of the pigment, while many are entirely destitute of that element. This total absence of color, in many of the granules composing even the blackest hair, gives to the fibrous structure, when examined with the microscope, an interruptedly streaked appearance (Plate IV. fig. 2); and the irregular intermixture of pigment granules with colorless granules, bestows upon the tissue between the streaks a dotted character. In red hair the granules have a delicate golden yellow tint, while the pigmentary matter is amber-colored. In the white hair of Albinoes and of the aged, the pigment is wanting.

The external layer or cuticle of the hair is a thin and transparent envelope, measuring in the hairs of the head about $\frac{1}{8000}$ of an inch in thickness. It is transparent and homogeneous, but is marked externally by undulating and jagged lines, which represent the edges of quadrangular non-nucleated scales or plates, which overlap each other from the root to the point of the hair. The overlapping border of the scale is notched and convex, and forms a slight projection beyond the level of the surface. Seen with the microscope, the prominent edges of the scales have the appearance of undulating and jagged lines, which cross at right angles the shaft of the hair (fig. F). The prominence of the edges of the superficial scales of a hair is the cause of the sensation of roughness which we experience in drawing a hair between the fingers from the point towards the root, a sensation which is not perceived when the direction of the hair is reversed. It explains, also, the circumstance of hairs occasionally working their way into wounds, beneath the nails, and into the gums. In the hairs of the axillæ the external layer is frequently more or less split up into fibres, which give it a shaggy appearance. Sometimes this appearance occurs only on one side of the hair, or more on one side than the other, while at others it is equally conspicuous around the entire shaft. It forms a remarkable distinctive character of the hairs of this region, and is due, we believe, not to original formation, but to their saturation with the perspiratory fluid and the breaking up of the scales of the cuticle by softening and constant attrition. In the neighborhood of the bulb, the two portions of the cuticle of the hair, now described, namely, the outer scale-

Fig. F.



formed layer and the inner transparent layer, are distinguishable from each other as separate structures, and are peculiarly interesting, as illustrating the homology of hairs and teeth; the transparent part of the cuticle of the hair being, according to Huxley, homologous with the enamel of a tooth; and the squamous layer, which is essentially the basement membrane of the papilla of the hair, with the corresponding membrane of the pulp of a tooth, and described by Nasmyth under the name of "persistent capsule."

The hairs are implanted at a variable depth within the skin, and are maintained in position by means of their follicles. The depth of implantation of the hairs of the head is between $\frac{1}{10}$ and $\frac{1}{20}$ of an inch, their bulbs being situated in the deep stratum of the corium, and frequently extending into the subcutaneous adipose tissue. The hairs of the whiskers, beard, and pubes, are commonly prolonged beyond the corium, while those of the general surface rarely exceed its mid-depth. The depth of implantation of the hair of the pubes is the same as that of the hairs of the head.

The follicle of the hair, or hair-sac, is a tubular canal excavated in the substance of the derma and lined by a thick layer of epidermis. It presents consequently the same structures that enter into the composition of the skin, namely, an epidermal lining or sheath, commonly called the root-sheath, from its intimate relation with the root of the hair; the basement membrane of the corium, known as the structureless membrane of the hair-sac; and two fibrous layers, the inner consisting of fibres with transversely arranged columnar nuclei (Kölliker's layer); and an exterior membrane, consisting of longitudinal fibres and nuclei, into which the muscles of the hair-sacs, the arrectores pilorum, are inserted. This latter layer also contains a plexus of bloodvessels, together with filaments of nerves, and supplies the means of nutrition to the root-sheath and its contained hair. The epidermal layer or root-sheath is composed of several strata of cells, which, having each a different arrangement, are regarded as distinct membranes; the most external of these, corresponding with the rete mucosum of the epidermis, presents a stratum of cells of which the long axis is transverse; this is the outer root-sheath; next follows a stratum, of which the cells have a longitudinal arrangement and are without nuclei, this is the inner root-sheath of Henle; while, lining the latter, is a third layer, composed of cells with nuclei also arranged longitudinally (Huxley's layer).[1] The epidermal layer is nearly as thick as and often thicker than the hair which it incloses, and lies in contact with the latter to the fundus of the sac and base of the papilla pili.

The hair-follicle or hair-sac terminates inferiorly in a slightly dilated cœcal pouch, and from the centre of the fundus of this pouch there projects into its cavity a dermal papilla of an ovate form, the broad end of the papilla being free, and the smaller end continuous with the substance of the derma. This is the papilla of the hair, the hair-pulp, or hair-germ, or blastema pili; it is identical in structure with an ordinary dermal papilla, only differing in size, in form, in position, and in the absence of capillary vessels. The hair-papilla measures between $\frac{1}{8}$ and $\frac{1}{40}$ of a line in length, by $\frac{1}{11}$ to $\frac{1}{20}$ of a line in breadth;[1] and is surrounded by the elements of the future hair, which are round nucleated cells, more or less charged with pigment, and about $\frac{1}{4000}$ or $\frac{1}{6000}$ of an inch in diameter. As these cells are traced higher into the root of the hair, they become elongated and gradually metamorphosed into the permanent structures of the hair, the fibrous cortex and the still cellular medulla. The researches of Huxley have tended to establish an identity of nature and design, in other words, an homology between the hair and a tooth; and to prove that, as a tooth is a product of the corium of the mucous membrane, so also is a hair the product of the corium of the skin; and that as the pulp of the tooth is metamorphosed into ivory, so the papilla or pulp of the hair bulb is metamorphosed into the fibrous cortex of the hair, the cuticle of the hair representing the enamel of the tooth, and the medulla of the hair the cavitas pulpæ.[2]

---

[1] Kölliker's Manual of Human Histology, vol. ii.

Growth of the hair is accomplished by the successive formation of new cells in the superficial portion of the papilla of the hair, and these cells are gradually moved onwards and converted into the fibrous tissue of the hair, while new cells are produced to supply their place. During the operation of this metamorphosis, the cells in course of conversion into hair-fibres become elongated, while their lateral diameter is correspondingly reduced, and the newly-formed root of the hair is consequently smaller than the bulb. Probably the fluids of the metamorphosed cells are transmitted onwards into the shaft of the hair, and so tend to its nutrition and health. The energy of growth of hair offers considerable diversity; it is more active in youth than in age, in summer than in winter, in hair which is cut than in that which is left to its natural growth, and in hair that is frequently cut than in that which is cut but seldom. In a young person of feeble constitution recently shaved, we found the hair of the head to have grown four lines in three weeks, showing that the amount of growth is probably more than a line in the course of a week. Berthold[3] ascertained that in young females between the age of sixteen and twenty-four, the growth was seven lines in the month. He also showed by his observations that the hair grew the quicker for being frequently cut; that the beard shaved every twelve hours became lengthened at the rate of five inches and a half to one foot in the course of a year; that when shaved every twenty-four hours, it grew at the rate of five to seven inches and a half; and that shaved every thirty-six hours, it grew only four to six inches and a half during the same space of time. He also found that the hair grows one-sixteenth faster by day than by night, and more quickly in the summer than the winter time.

---

[1] Kölliker.

[2] On the Development of the Teeth and on the Nature and Import of Nasmyth's Persistent Capsule. Microscopical Journal, vol. i. 1853, p. 149.

[3] Muller's Archiv. 1850.

Whithof calculated that the hair of the beard grows at the rate of one line and a half in the week; equivalent to six inches and a half in the course of a year, or twenty-seven feet in a lifetime of eighty years. And Eble informs us that in the Princes' court at Eidam, there is a full length painting of a carpenter whose beard was nine feet long.

It is by no means uncommon to find two hairs, and sometimes three, issuing from the aperture of one follicle; but at a short distance below the level of the epidermis, such a follicle would be found to divide into separate tubules for each hair. Within the nose we have counted as many as ten hairs issuing in this manner from a common follicle, but below the surface there were always as many tubules as hairs.

In a healthy state of the skin the space between the epidermal lining of the follicle and the hair is very trifling. Indeed, it is merely sufficient to receive the exfoliated scales of the former, which are to be conveyed with the growing hair to the exterior. At a short distance (about half a line from the surface) within the derma, however, the space enlarges, in consequence of the junction with the follicle of one, two, or more excretory ducts of sebiparous glands, and the consequent stream of sebaceous substance which is poured into it. It is in this part that the entozoa of the hair-follicles are chiefly found; the steatozoon folliculorum.

Mandl entertains some peculiar views with regard to the structure and mode of growth of hair. He describes a hair as consisting of a cortical portion, which is cellular, and a medullary portion, which is tubular. Through the latter, he conceives that the fluids of the hair ascend, and are deposited at the free extremity of its shaft, in successive layers, each layer becoming gradually smaller in diameter, until the hair eventually assumes the form of a fine point. This structure, he says, is indicated on the tapering extremity of a hair by a series of annular lines. The mode of growth here described he believes to be proved by the production of a pointed end upon hairs which have been cut, and also by the whitening of hair which sometimes commences at the point. The latter fact he explains by the transmission of colorless fluids to the end of the hair. Besides this mode of increase, he admits that another takes place at the root by apposition. Mandl is clearly in error with regard to his hypothesis. Growth never takes place at the point of the hair, and, consequently, the hair cannot *grow* white at the point. It may exhibit indications of bleaching in that situation, from external conditions, sooner than in the rest of the shaft, but the process is purely physical. Again, the annular lines to which this author refers, are simply the margins of the overlapping scales of the cuticle of the hair, the scales being smaller and less jagged in that situation than on the shaft of the hair.

The hair-follicles are not situated perpendicularly, but, obliquely in the skin, hence the direction of the hairs, after their escape from the follicles, is in the same sense inclined towards the surface; and the "set" of the hair, from the root to the point, is governed by a law as precise as that which regulates any other of the secondary vital functions. Thus, on the head, the hair radiates or whirls from a single point, the crown,[1] to every part of the circumference, making a gentle sweep behind, towards the left, and in front, to the right. The direction of this sweep or whirl, is naturally indicated on the heads of children, and is that in which the hair is habitually turned. On the forehead the downy hairs proceed from the middle vertical line, with a gentle curve to the right and left, sweeping downwards to the situation of the whisker, and forming, by their lower border, the upper half of the eyebrow. Occasionally, the line of divergence of the forehead is oblique in its direction, running from the left of the forehead to the root of the nose. At the inner angle of each eye is situated another radiating centre, like that of the crown of the head; and a vertical line of divergence is continued downwards from this point, by the side of the nose, mouth, and chin, to the under part of the latter, where it curves inwards to the middle line. The upper and inner rays from the centre ascend to the line between the eyebrows, where they meet those which are proceeding from the opposite centre, and those, also, which are diverging from the vertical central line of the forehead; so that here, a lozenge is formed, which is the point of approximation of hairs from four different quarters. It is this circumstance that gives to the hairs of the inner end of the eyebrows a direction towards the middle line; and occasionally we see instances in which, from the unusual development of these hairs, the eyebrows meet at the base of the forehead, and form a little crest, for a short distance, along the root of the nose. The lower and inner rays from the angle of the eye diverge from the preceding, and are directed downwards and inwards upon the side of the nose; when strongly developed, they meet those of the opposite side on the ridge of the nose, and at their point of divergence from the ascending current necessarily form another lozenge. This latter is a lozenge of divergence, that of the forehead being one of convergence. The upper and outer rays from the angle of the eye curve along the upper lid, forming, by their upper margin, the lower half of the eyebrow, and at the outer angle of the eye being lost in the converging currents of the whisker. The lower and outer rays from the centre at the angle of the eye, together with those from the vertical line of the side of the nose, mouth, and chin, make a gentle sweep over the cheek, side of the face, and jaw, to be lost, the upper ones in the front of the whisker, the middle rays, after passing beneath the ear, in the middle line of the back of the neck, and the lowest rays in the angle of bend of the jaw, in which latter situation they come into opposition with an ascending current from the chest. The rays from the inner margin of the vertical line of the side of the nose, mouth, and chin, are directed inwards upon those parts. On the upper lip they are met by a current directed from the apertures of the nose, outwards, and forming the sweep of the mustachio; a similar disposition is observed in the middle line of the lower lip, near its free edge, while the beard is formed by the convergence of two side currents meeting at the middle line. The current from the side of the head divides at the ear, those which pass in front of that part, and some, also, from the skin before the ear, contributing to form the posterior border of the whisker, and then passing backwards beneath the ear, with the current from the face, to the middle line of the nape; while those which pass down behind the ear converge with those from the back of the head also to the middle line of the nape.

---

[1] Sometimes there are two crowns, as in a little girl now before us, in whom the sweep from the left crown is to the left. and the right to the right, so that the hairs from the two crowns converge and meet in a crest along the middle line of the head.

On the trunk of the body there is a centre of radiation from each armpit, and two lines of divergence, one of the latter proceeding horizontally to the middle of the front of the chest; the other, from this horizontal line, just in front of the axilla, vertically along the side of the trunk, across the front of the hip, and down the inner side of the thigh to the bend of the knee. From the axillary centre, and from the upper side of the horizontal line, a broad and curved current sweeps upwards and inwards over the upper part of the front of the chest, and outwards, around the neck to the middle line of the nape, the outermost part of the current passing over the shoulder to the middle line of the back. From the lower side of the horizontal line, and from the front of the upper half of the vertical line of the trunk, the set of the current is downwards and inwards, with a gentle undulation to the middle line, and from the lower half of the vertical line of the trunk, the direction is upwards towards the middle line and umbilicus, so that the latter is the centre of convergence of four streams from the anterior aspect of the abdomen, two from above and two from below. From the centre at the axilla and posterior border of the vertical line of the trunk, the current streams downwards and backwards, also with an easy undulation, to the middle line of the back. The inner extremity of the horizontal line of the chest is the seat of a lozenge of divergence, and that of the line of the bend of the lower jaw, at the front of the neck, of a second.

From the axillary centre just described there proceeds another line of divergence, which encircles the arm like a bracelet, immediately below the shoulder. From the upper margin of this line the direction of the current is upwards over the shoulder, and then backwards to the mid-line of the back. Another line commences at this ring on the front part of the arm, and runs in a pretty straight course to the cleft between the index finger and thumb on the back of the hand; this is the line of divergence of the arm; from it and from the ring the stream sets, at first, with a sweep forwards, and then with a sweep backwards to the point of the elbow. In the forearm the diverging currents sweep downwards in front, and upwards behind, also tending to the point of the elbow, which is thus a centre of convergence; while on the back of the hand and fingers the sweep outwards, with a curve having the concavity upwards, is quite obvious.

On the lower limb there are two vertical lines of divergence; the one being the continuation of that of the side of the trunk, proceeding around the inner side of the thigh to the bend of the knee; the other, an undulating line, beginning at about the middle of the hip, running down the outer side of the thigh to the bend of the knee, then continuing down the outer side of the leg, reaching the front of the ankle, and terminating on the foot at the cleft between the great and second toe. A short oblique line connects the two vertical lines at the bend of the knee. On the front of the thigh the streams from the two lines converge, and descend towards the knee. On the back they converge also at the middle line, but ascend towards the trunk of the body. On the leg, where there is but one line, the diverging currents sweep around the limb, and meet upon the shin, while on the foot they diverge with a sweep as upon the back of the hand.

Quantity of hair has reference to the proximity of the follicles, and also to the number of follicles which open by a common aperture on the skin. Whithof counted the number of hairs on a square inch of skin, and found of black, 588; chestnut, 648; and flaxen, 728. A similar investigation was made by Jahn in the person of an unusually hairy man, twenty-eight years of age. In a given extent of skin in this person he found on the

Summit of the head, ...	321 hairs,
Back of the head, ...	242 "
Front of the head, ...	238 "
Chin, ...	52 "
Pubes, ...	45 "
Forearm, ...	31 "
Outer border of hand, ...	20 "
Front of thigh, ...	21 "

Four years after this calculation was made, the man having married in the meantime, the number was diminished on all parts of the body, with the exception of the chin and pubes, where they had increased, on the former seven, and on the latter five.

In our own observations directed to this point, we ascertained that the number of hair-pores in the scalp of a man twenty-five years of age, having black hair, amounted in the square inch to 744. Now, supposing each pore to give passage to a single hair only, this number would represent the amount of hairs growing on a superficial square inch of the skin of the head; and, as the extent of surface of the scalp is about one hundred and twenty superficial square inches, the number of hairs on the entire head would amount to 89,280, or in round numbers to 90,000. This calculation, however, has reference only to a thin head of hair, for many of the pores give passage to two hairs; and, supposing this to be the case with one-half, we should then have as the number of hairs in a superficial square inch, 1116; and upon the entire head 133,920. Or, supposing, as would probably be the case, in a thick head of hair, that every pore gave forth two hairs, the number in an inch would then be increased to 1488, and the total number for the whole head to 178,560; nearly two hundred thousand. As an average, therefore, of the number of the hairs of the head, we may fairly take the number in a superficial square inch at 1000, which would give as the number on the entire head, 120,000. Whithof's calculation would give 70,560 for black hair; 77,760 for chestnut; and 87,360 for fair hair; while another German author states the number as 88,740 for red hair; 102,962 for black; 109,440 for brown; and 140,000 for fair hair.[1]

Looking back on the structure of the hair, we cannot but be forcibly impressed with the perfection of organization which it exhibits; and this feeling is increased when we reflect on the elasticity, the strength, and the durability of so delicate and slender a thread. The former of these properties, tested by the experiments of Weber, has been referred to at page 38. A single hair of a boy eight years of age, says Robinson, in his "Essays on Natural Economy," supported a weight of 7812 grains; one of a man, aged twenty-two, 14,285 grains; and the hair of a man of fifty-seven, 22,222 grains. Muschenbroeck found that a human hair fifty-seven times thicker than a silkworm's thread would support a weight of 2069 grains, and a horsehair, seven times thicker, 7970 grains. The strength of the hair is due to its fibrous portion, for hairs deficient in this structure, like those of the fallow deer, are remarkable for their brittleness. The durability of hair is shown in its endurance of chemical processes, and in its discovery, a few years since, in the tomb of a Theban mummy, supposed to be 2000 years old.

The development of hair has been made the subject of research by Heusinger, Simon,[2] and other physiologists. The earliest trace of hair rudiments is perceptible at the twelfth week of embryonic life, and of the hair itself at the eighteenth week. These early traces are found in the eyebrow, and are followed successively by similar appearances on the head, back, chest, and extremities, so that by the end of the sixth month hair may be met with on the whole body, with the exception of the hands and parts of the forearm and leg. Development of the hair commences by the formation of small globular masses, resembling buds, on the under surface of the rete mucosum. These buds grow inwards into the corium, and after a time have the appearance of flasks, composed of nucleated cells, identical in structure with those of the rete mucosum. Subsequently, the central cells become elongated in form and darker colored than the peripheral cells, and separate from the latter; and at a later period, the central cells are metamorphosed into a hair and inner root-sheath, while the external cells become transverse in their position, and are converted into the outer root-sheath, around which are developed the three membranes of the hair-sac. It follows, therefore, that the primitive hair does not grow, as in its subsequent existence, but is developed, in all its completeness, with a point, a shaft, and a bulb, and that, at the same time with the growth inwards of the flask-shaped process of the rete mucosum, a papilla is developed from the corium, and grows outwards, to penetrate its fundus, and develop the first trace of the future hair. Two movements of growth are therefore established, a growth inwards of the hair rudiment, and a growth outwards of the papilla and hair. The point of the hair is in this way brought to the surface of the epidermis, and bursting through the cone of the inner root-sheath, is developed as a free hair. Simon has described the young hair as being bent upon itself, so that the point and the bulb are approximated, and the young hair as making its way through the aperture of the follicle in the form of a loop.

---

[1] London Review, September 23, 1865.

[2] Zur Entwickelungsgeschichte der Haare. Von Dr. Gustav Simon. Müller's Archiv. 1841.

In the human embryo, the lanugo infantium begins, therefore, to be apparent, during the first half of the fifth month of intra-uterine existence, upon the eyebrows, upper lip, and around the mouth; and at about the middle of the month, upon the head. By the end of the sixth month it is pretty general over the whole body, the last parts on which it is seen being the back of the toes and fingers, the ear, and the nose. At the sixth month Eble found the hairs of the head to measure three lines, those of the eyebrows two lines, and the eyelashes half a line. At birth the fœtus is covered with a thick down, the minute hairs being pale and without color, and in their structure consisting only of fibrous substance and cuticle. It is at this period that we have the best opportunity of observing the direction of the hairs; for during the first year the greater part of these temporary hairs have been shed, and they are succeeded by a more permanent kind, which appear upon the surface only in certain situations. At the period of adolescence the hairs acquire a new impulse of growth in co-relation with the more active development of the frame; and when the powers of the system are on the wane, the hair is among the first of the organs of the body to evince an associated infirmity.

The process of shedding and renewal of the hair has been observed by Kölliker in the eyelashes of a child a year old, and has since been seen in operation in other regions of the body. It is simply a repetition of the phenomena of development of the hair already described, but taking place from the fundus of a hair-sac instead of from the surface of the skin. The cells of the root-sheath protrude, and form a bud, and the bud gradually elongates in the deeper layers of the corium, carrying with it the hair-sac, and having inclosed in its mass a hair papilla. On attaining a certain length, the central and peripheral cells assume a difference of character, the former acquiring pigment and a longitudinal prolongation; the latter remaining clear, and becoming transverse; the former undergoing metamorphosis into hair and inner root-sheath, the latter into outer root-sheath. Subsequently, growth outwards begins to be active; the old hair is moved onwards to the surface, and ejected through the aperture of the follicle; while the new hair bursts its enveloping sheath, and takes the place of its predecessor. By this mode of development the downy hair of the infant, the lanugo infantium, is replaced by the permanent hair by which it is succeeded; but it is doubtful whether the same process of renewal is continued after the period of infancy. It is obvious that it may occur, and may be one mode of reproduction of the hair; while, on the other hand, it is known that the common mode of reproduction of the hair, when a hair has fallen or been removed by violence, is the regeneration of the original papilla, or the restoration of its normal functions.

In chemical composition hair is found to differ from epidermis and horn, and also from albumen and fibrin. Its chief constituents are, an animal substance a modification of protein, apparently a compound of protein and sulphur; a certain quantity of fat, some pigment, and certain mineral and earthy salts, among which are iron, manganese, and silica, the quantity of ash varying between one and two per cent.

According to the analysis of Vauquelin, the chemical constituents of hair are, animal matter in considerable proportion; a greenish black oil; a white, concrete oil, in small quantity; phosphate of lime; carbonate of lime, a trace; oxide of manganese; iron; sulphur, and silex. Red hair contains a reddish oil, a large proportion of sulphur, and a small quantity of iron. White hair, again, exhibits a white oil, with phosphate of magnesia; and the white hair of old persons, a maximum proportion of phosphate of lime.

The ultimate analysis of hair, according to Scherer,[1] exhibits the principal elementary constituents in the following proportions:—

Carbon, . . .	50.652	Nitrogen, . . .	17.936
Hydrogen, . . .	6.769	Oxygen with Sulphur, .	24.643

Fair hair contains the least carbon and hydrogen, and most oxygen and sulphur; black hair follows next; while brown hair gives the largest proportion of carbon, with somewhat less hydrogen than black hair, and the smallest quantity of oxygen and sulphur. The hair of the beard was found to contain more carbon and hydrogen than the hair of the head, and less oxygen and sulphur. The quantity of nitrogen is the same in all.

NAILS.

The NAILS are horny appendages of the skin, identical in formation with the epidermis, but peculiar in their mode of development and growth. A nail is convex on its external surface, concave within, and implanted by means of a root into a fold of the derma, vallecula unguis, which is nearly two lines in depth, and acts the part of a follicle to the nail. The surface of the corium, on which the nail rests, is termed its matrix or bed, and the prominence which surrounds it and overlaps it on its two sides and at its root, is the wall of the nail. The surface of the matrix is marked by longitudinal ridges, which increase in depth from the root towards the extremity, and in the fundus of the fold are several rows of transverse ridges; the ridges are studded with minute papillæ, which are the active agents in the growth of the nail. The papillæ of the fundus of the follicle produce the margin of the root, and by the successive formation of cells in that situation push the nail onwards in its growth. The concave surface of the nail is in contact with the derma, and the latter is raised into laminæ, which perform the double office of retaining the nail in its place, and giving it increased thickness, by the addition of newly-formed cells to its under surface. It is this constant change, occurring at the under surface of the nail, co-operating with the continual reproduction taking place along the margin of the root, which insures the growth of the nail in the proper direction. For it is clear, that if the adhesion of the concave surface of the nail with the derma were not perfectly soft and yielding, the addition of successive layers of cells to the follicular margin would be wanting in the force necessary to push it forward in the direction of its growth.

---

[1] Liebig, Organic Chemistry.

The nail derives a peculiarity of appearance from the disposition and form of the laminæ upon the ungual surface of the derma. Thus, beneath the root of the nail, and for a short distance onwards towards its middle, the derma is covered with ridges, which are more minute, and consequently less vascular, than the laminæ somewhat further on. This patch of ridges is bounded by a semilunar line, of which the concavity is turned towards the root, and in consequence of appearing lighter in color than the rest of the nail, has been termed the *lunula*. Beyond the lunula the laminæ are raised into longitudinal plaits (Plate II. figs. 4, 5), which are exceedingly vascular, and give a deeper tint of redness to the nail. These plait-like laminæ of the derma are well calculated by their form to offer an extensive surface, both for the adhesion and formation of the nail. The granules and cells are developed on every part of their surface, both in the grooves between the plaits, and on their sides, and a lamina of nail is formed between each pair of plaits. When the under surface of a nail is examined, these longitudinal laminæ, corresponding with the longitudinal plaits of the ungual portion of the derma, are distinctly apparent; and if the nail be forcibly detached, the laminæ may be seen in the act of parting from the grooves of the plaits. This laminated structure upon the internal surface of a nail is seen in a magnified form in animals; for instance, in the perpendicular wall of the hoof of a horse. Moreover, it is this structure that gives rise to the ribbed appearance of the nail, both in animals and man. The surface of the derma which produces the nail, the matrix of the nail, is continuous around the circumference of the attached part of that organ with the derma of the surrounding skin, and the horny structure of the nail is consequently continuous with that of the epidermis.

That nothing may be wanting to complete the analogy of structure of the nails and the epidermis, pigment granules are found entering into their composition. The grayness of hue which the nails of some persons exhibit is due to the presence of this element, and upon a microscopic examination of a section of the nail, the granules may be observed in greater or less number disseminated in streaks amongst the horizontal strata of which the nail is composed. Pigment is also found in the deeper cells of the nail of the negro. The only difference in structure that has been noted between the epidermis and the nail, is the persistence of the nucleus of the cells of the latter. While in other respects, the cells of nails undergo a more complete condensation and solidification as a consequence of their mode of growth, and probably of a more active nutrition. When kept pared, nails have a constant and active growth, but when left to themselves they attain a certain length and then cease to grow; as we see in bedridden persons, and amongst those nations of the East, as amongst the Chinese, who permit the growth of the nail to its full extent. A French physician, Dr. Beau,[1] has observed that the nails of the feet are four times slower in their growth than those of the hands. The latter increased in length one millimetre, that is, two-fifths of a line, in one week; while the nails of the foot required four weeks for the same amount of increase. According to him, the length of the thumb-nail, including the root, which is hidden from sight, is eight lines, that is, twenty millimetres; consequently, the period occupied in the growth of that nail would be twenty weeks, or five months. In like manner, the nail of the great toe, measuring in length nine lines and a half, or twenty-four millimetres, and requiring four times the period of the thumb-nail, would consume ninety-six weeks, that is, nearly two years, in its growth.

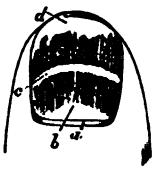
Dr. Beau has further remarked, that during the continuance of every constitutional disorder the nails suffer to a greater or less extent. According to him, the law of growth of the nails is precisely the same both in health and disease, an assumption which, although not strictly true, approaches sufficiently near the truth to be admitted as a general proposition; but that in disease, the materials of growth are supplied by the blood in diminished quantity. Hence, the portion of nail formed during the existence of illness will be perceptibly thinner than that produced during health, and may be distinguished on the surface as a transverse groove. If the disease have been sudden, the outer boundary of the groove will be abrupt, and *vice versâ*. And if the disease be one in which the nutritive functions are seriously affected, the depth of the groove will maintain a relative correspondence. Admitting these data, Dr. Beau suggests, as a practical application of his observations, the possibility of determining the period of occurrence and also the period of duration of a disease, provided the time do not exceed that required for the entire growth of the nail. For example: a groove, of which the distal margin is situated at the distance of eight millimetres from the edge of the root of the thumb nail, or five from the free margin of the skin, is indicative of an attack of disease which commenced eight weeks previously; while the breadth of the groove being two millimetres would prove the disease to have continued for the space of two weeks. After five months the thumb-nail ceases to be a tell-tale, on account of its entire growth in length being accomplished, and the vestige of disease consequently obliterated. The great toe-nail, however, may now be appealed to. At five months the groove indicative of the above disease has advanced only five millimetres from the root, and is only just becoming apparent beyond the free margin of the skin, the breadth of the groove being only half a millimetre. In making these observations, M. Beau selects the thumb-nail and corresponding nail in the foot, because in them only he finds the appearances regularly present.

To put Dr. Beau's observations to the test of experiment, we noted an illness which took place in ourself, commencing on the 14th of December, and lasting a fortnight. On the first of May following, we found across each thumb-nail, a groove measuring one line in breadth. Now, a line is equal to two and a-half millimetres, and as the rate of growth, according to Dr. Beau, is one millimetre a week, our illness should have lasted two weeks and a half instead of two weeks. We therefore came to the conclusion that, either our feelings of convalescence preceded the perfect restoration of the functions of nail-formation, or that the rate of growth of the nail was more rapid in us than in other persons. We next measured the distance between the distal margin of the groove and the epidermal margin at the root of the nail, and adding to that quantity three millimetres for the depth of nail concealed by the follicle, obtained as a result seventeen millimetres; in other words, a space representing seventeen weeks, whereas the real time was nineteen weeks and a half. This was exactly the reverse of our first observation, and went to prove that, in us at least, the growth of the nail was less rapid than is represented by Dr. Beau. Nevertheless, the experiment came sufficiently near the truth to render Dr. Beau's observations interesting and deserving of attention.

---

[1] Archives Générales de Médecine, vol. xi. p. 447.

Fig. G.



A thumb-nail bearing the mark of a foregone illness.

a is the edge of the scarf-skin which overlaps the nail at its root. *b*. The lunula. *c*. The groove occasioned by deficient formation during the period of the illness *d*. The free extremity of the nail.

The development of the nail commences during the third month of embryonic life, by the prominence of the corium around the boundary of the future matrix; this prominence is the wall of the nail, which marks out a quadrangular area; and up to the end of the third month, the matrix is covered by ordinary epidermis. During the fourth month a harder layer is formed under the epidermis, and becomes gradually thicker and larger, until, in the seventh month, it protrudes its free edge. The nail is, therefore, developed originally under the epidermis, and at a later period only, assumes its external position. At birth, in consequence of the growth of the fingers, the nail is narrower at the free edge than elsewhere, and is commonly broken off, but the whole of the original nail is not worn away until the infant is six or seven months old.

In a chemical analysis of the horny tissue of nail, Scherer[1] found the elementary constituents in the following proportions:—

Carbon . . .	51.089	Nitrogen . . .	16.901
Hydrogen . . .	6.824	Oxygen with Sulphur .	25.186

The chief nitrogenous element is protein with sulphamide; the amount of ash is the same as for epidermis, about one per cent., but there is more sulphur and carbon; and, according to Lauth, more phosphate of lime, which gives additional hardness to the nail.

PHYSIOLOGY OF THE SKIN.

In a physiological point of view, the skin is an organ of sensation, absorption, and secretion; in the former capacity it supplies us with knowledge, affords us gratification, and warns us of the presence of injurious or destructive agents; by means of the second, it is enabled to appropriate the fluids contained in the surrounding medium, and perform the office of a respiratory organ; and by means of the third, it provides for its own softness and pliancy, regulates the influence of temperature, both external and internal, and acts as an important depurating organ of the blood.

---

[1] Liebig, Organic Chemistry.

As an organ of sensation, it endows us with the function of *touch*, of determining the qualities of objects by their properties of resistance, of extent, and of variety of surface. It enables us to distinguish between hard and soft, smooth or rough, hot or cold. And the education of this sense, effected by concentration of attention, and increased powers of appreciation and adaptation, enables the blind to read with the aid of their fingers, to trace the most minute variations of form or surface, and even to detect the mysterious tactile differences of colors.[1]

The sensibility of the skin varies normally in different parts of the body; thus, it is greatest on the pulps of the fingers, and least in the middle of the limbs, as of the thigh and arm. This has been proved by the curious results of the researches of Weber, who applied the points of a pair of compasses to the skin, in various parts of the body, in order to ascertain the degree of sensibility of the skin in the perception of a double impression. Thus, upon the pulp of the middle finger, the two points were felt when only separated from each other to the extent of one-third of a line; on the palmar surface of the same finger it was necessary to separate them two lines; on the cheek, five lines; forehead, ten lines; on the middle of the breast, twenty lines; and on the middle of the arm and thigh, thirty lines. He observed, moreover, that the delicacy of perception was greatest in the direction of the branches of the nerves, as, transversely on the face and front of the neck, longitudinally on the fingers, &c.[2] The same author has pointed out some remarkable instances of differences in the perception of temperature; thus, he has shown that if the two hands be immersed in water of the same temperature, that in which the left is placed will feel the warmest, while the right is the most sensitive of touch; and again, that a weak impression made upon a large surface of skin, produces a more powerful effect upon the nervous system than a strong impression upon a small surface. This is practically illustrated by taking hot water and immersing in it the finger of one hand, and the entire of the other hand; the single finger will suffer no inconvenience from the heat, while to the hand it may be insupportable. For the same reason, the hand is better adapted than the finger to test the temperature of a bath before the immersion of the body; and even then it may be found that a heat which is pleasant to the hand may be intolerable to the entire skin. In pursuing the investigation of the diseases of the skin, we find hourly instances in corroboration of these facts.

---

[1] It is noteworthy that dealers in human hair determine the qualities, and consequently the commercial value, of the article, chiefly by the touch; and, as we were recently informed, a buyer of silk is enabled by the touch alone to distinguish forty different varieties of texture of that substance.

[2] We have repeated these experiments, and the results are very surprising.

The sensibility of the skin is subject to considerable modification under the influence of disease; the natural sensibility may be heightened, or it may be diminished, or, again, it may be altered. These changes obviously depend on some modification of the nervous system, the nature of which is, for the present at least, beyond our grasp. The more common morbid sensations of the skin, in addition to heat and cold, are, itching, tingling, smarting, pricking, shooting, creeping, tickling, burning, scalding, &c.; and it is to be remarked that these sensations are more acute in certain situations than in others, and that they are simple modifications of common sensation, and have no connection with the special tactile function of the skin; for example, the armpits, the sides of the body, and the soles of the feet, are the most sensitive to tickling, while the nipple is comparatively insensible to the pressure and friction of clothing, but is highly appreciative of touch.

By means of its absorbing power the skin is enabled to act as a respiratory organ. The importance of this function in man is not sufficiently estimated, but in the lower animals it is universally acknowledged. The process of absorption by the skin is effected by an active endosmosis, which is more and more controlled by vital influence, as it reaches the strata of the epidermis most nearly in contact with the derma. This function of the skin is calculated to enact an important part in the health of the individual, in relation to the purity or impurity of the atmosphere in which he moves.

The absorbing power of the skin, in common with that of the mucous lining of the respiratory passages, is actively brought into play whenever the body has been exhausted of its fluids, and becomes a means of restoring their equilibrium. A gentleman, who was pursuing the practice of the Turkish bath with great zeal, made at our request the following observations on himself, and repeated them many times with precisely similar results, and we may observe that identical results have attended the same experiment when performed by others. On entering the bath he was carefully weighed, and at the conclusion of the bath he was weighed again after having passed an hour in a dry atmosphere, heated to 180°; he had lost a pound in weight. He then dressed and returned leisurely to his home, and after the lapse of two hours was again weighed. He had recovered the pound which he had lost in the bath; he had absorbed it from the atmosphere, for he had neither eaten nor drunk during the interval. The fact is somewhat startling, and teaches us the power of opposition which nature creates to recover an equilibrium which we too frequently set ourselves wilfully to disturb. It is a powerful argument against the excessive sweating which the promoters of the dry-air bath have so heedlessly encouraged. The real Turkish bath is a bath of low temperature, about 120°, of which the atmosphere abounds in moisture, having rills of water streaming over its heated floor, and which therefore restores as quickly as it withdraws the watery fluid from the body, establishing, in fact, a circulation in the

Fat,	24.2
Osmazome, with traces of oil,	12.6
Watery extractive (salivary matter),	11.6
Albumen and casein,	24.2
Carbonate of lime,	2.1
Phosphate of lime,	20.0
Carbonate of magnesia,	1.6
Acetate and muriate of soda and loss,	3.7
	100.0

"The ear-wax is an emulsive compound which contains a soft fat, albumen, a peculiar extractive bitter matter, epithelial scales, lactate of lime, and an alkaline lactate, but no chlorides, and no phosphates soluble in water."[1]

The function of the skin as a regulator of the temperature of the body, and as a purifier of the blood, is effected by means of a peculiar secretion, the perspiration. When this secretion is eliminated in the form of an imperceptible vapor, it is termed *insensible*, and when condensed or poured out in a fluid state, *sensible* perspiration. The insensible perspiration is partly derived from the sudoriparous and sebiparous glands, and partly from the natural evaporation taking place from the epidermis. The sebiparous system has not been heretofore pointed out as a source of the perspiratory fluid, but frequent observation has convinced us, that this apparatus plays an important part in the elimination from the system of the watery elements of the blood. Lavoisier and Seguin estimate the mean quantity of perspiration, both insensible and sensible, secreted by the skin in the course of twenty-four hours, at thirty-three ounces, and assign to the pulmonary exhalation twenty-one ounces, making a total of fifty-four ounces for both, or somewhat more than three pounds; while they set down the maximum at eighty ounces, and the minimum at twenty-one ounces. The experiments of Dr. Dalton furnished him with different results, since he attributes to the lungs an amount of exhalation five times greater than that of the skin.

In some experiments made by Southwood Smith[2] on the stokers of the Phœnix Gas Works, it was ascertained that the maximum loss of weight in men who had been at work in a high temperature, for a period varying between three-quarters of an hour and an hour and a quarter, ranged between 2 lbs. 15 oz. and 5 lbs. 2 oz., the lesser degree of loss occurring on a cold and foggy day, the greater on a warm, clear, and somewhat windy day; and that, of two men placed in a bath of 95°, one recovered half a pound in weight in half an hour, and the other lost half a pound in the same space of time. The general results of Southwood Smith's experiments tend to show that the amount of perspiration, in other words, of loss of weight by perspiration, presents considerable variety in different men; that it offers considerable variety in the same individual at different times; that the subsequent absorption or recovery of the lost fluid exhibits equal variety; and that the amount of loss is greater on a warm and clear day than on a cold and foggy day.

---

[1] Simon, Animal Chemistry, translated by Dr. Day.

[2] The Philosophy of Health, &c. 1837. Vol. ii. p. 391.

The quantity of perspiration is altered by a variety of circumstances which affect the body physically, or through the agency of the nervous system. Of the former kind are, the temperature, current, and hygrometric condition of the atmosphere, and stimulation of the skin; of the latter, excited or depressed nervous powers. When the temperature of the atmosphere is unusually elevated and the air dry, perspiration takes place with so much readiness as to preserve the heat of the body at its natural standard. If, instead of being still, the atmosphere pass over the surface in a current, the quantity of perspiration is still further increased, and the cooling influence is more felt. But if, with the same temperature, the atmosphere be loaded with moisture, perspiration is prevented, and the heat of the body becomes intense. The influence of stimulation in the promotion of perspiration is shown in the effects of exercise, the warm bath, diaphoretics, &c. Instances of the influence of the nervous system are exhibited in the total arrest of perspiration during the hot stage of fever, and of its great increase under emotions of a depressing kind, as fear, anxiety, and also in syncope. The perspiratory secretion possesses its highest amount of activity during digestion, and is at its minimum immediately after taking food.

The secretion of perspiration is also modified by the greater or less activity of other secretions, particularly of the lungs and kidneys, the functions of these organs being frequently vicarious with the skin, and *vice versâ*. Thus, during the summer, and in warm climates, the perspiratory secretion is augmented, while the exhalation from the lungs and the quantity of urine are diminished. In the winter and in cold climates the reverse is the case. On quitting a warm apartment, especially after indulging in stimulants, for the cold air, a sudden check is given to the cutaneous function, while that of the kidneys is suddenly and actively called into exercise. The same fact is observed in certain diseases; the excessive sweats of phthisis may be regarded as vicarious of the diminished exhalation from the lungs, while diabetes is accompanied with a remarkably dry state of the skin. The arrest of perspiration again, from cutaneous disease, is often attended with congestion of the mucous membranes.

Of some experiments made by Dr. Lining in South Carolina, on the relative quantities of perspiration and urine during the warmer and colder months of the year, the results are as follow:[1]—

	Perspiration.	Urine.
July,	86.41	43.77
May,	68.11	56.15
October,	40.78	46.67
February,	37.45	77.86

The influence of the perspiration in regulating the heat of the body is strikingly evinced in the numerous recorded instances of exposure of the person to elevated temperatures. Sir Charles Blagden supported a temperature of 260° for nearly ten minutes. The furnace in which Sir Francis Chantrey dried his moulds, and which was frequently entered by his workmen, is said to have been kept heated to a temperature of 350°; and the oven used by Chabert, during his exhibitions in London, was heated to between 400° and 600°. The thermometer placed in the mouth of a man who had been exposed to a temperature of 120° for a quarter of an hour, stood at 105°; and the temperature of animals when the heat has been raised to a degree sufficient to cause death, has never exceeded an elevation of nine to fourteen degrees above the natural standard.[1]

---

[1] Dr. Robley Dunglison on Human Health.

The effort which is being made to introduce amongst us a bath similar to that used in the East, and in some measure resembling the ancient bath of the Romans, has afforded new illustrations of the effects of heat upon the animal economy, and of the powers with which we are endowed of resisting its influence. A temperature of 150°-180° of dry air to the naked skin is inexpressibly agreeable, if the amount of evaporation from the surface be nicely adjusted to the degree of temperature, that is, if the quantity of perspiration be sufficient, or somewhat more than sufficient, to carry off by evaporation every particle of heat which might act unpleasantly upon the sensations. But if the heat be greater in proportion than the quantity of perspired fluid, that is, if there be a less degree of moisture of the skin than is equivalent to the carrying off of the excess of heat, then a slight feeling of chill, as of a breath of cold air playing over the surface, is experienced, and the skin becomes red, dry, and parched. Persons who are unacquainted with the cause of this change are apt to express their wonder, that while they perspired freely in a lower temperature, they had ceased to perspire in one that is considerably higher; whereas, in reality, they do perspire more abundantly in the higher temperature, but evaporation is rendered more active by the increase of heat.

In a temperature of 250° of dry air, we experienced no inconvenience for the first few minutes, whilst evaporation and temperature were pretty equally balanced. Soon, however, we felt faint and uncomfortable, in consequence of the excessive demand suddenly made upon the watery fluid of the body; then, also, a chilly feeling seemed to travel over the surface of the skin, accompanied here and there with a dry parching sensation; the skin became dry, red, and congested; the heat had evaporated the moisture of the mouth and fauces, the throat felt dry; there was a dazzled sensation in the eyeballs, as though from congestion of its vessels; then followed a buzzing sound in the ears, apparently from the same cause, and at the end of ten minutes, we were glad to put an end to the experiment.

[1] It is interesting to note, that in animals made the subjects of these experiments the blood was found in the opposite position to that which it would have occupied after death from cold. Instead of being collected about the heart and internal organs as in death ensuing from the latter cause, the heart was empty, and the vital fluid dispersed towards the periphery of the body, in some instances being actually forced out of its vessels into the surrounding tissues. The blood seems to have been killed by the heat, for it had lost its power of coagulating, and its deep black hue was not altered by exposure to the atmosphere, a change which takes place in living blood. In a moist atmosphere, the animals died sooner than in dry air of a higher temperature and without losing weight; in dry air they lost weight.

In a damp atmosphere the cooling influence of the perspiration is necessarily lost; and the effects upon the system of prolonged exposure to a moist atmosphere at a high temperature have been recorded by a gentleman who recently visited the baths of Nero, near Pozzuoli, the ancient Posidianæ. To reach the bath he had to pass along a narrow, winding passage of about 120 yards in length, and 7 feet high, by about 3 in breadth. A little within the mouth of the passage, the temperature was 104° in the upper strata of the atmosphere, and 91° near the ground; farther on, the air was filled with dense vapor, of a temperature of 118° above, and 111° below; and over the bath it was 122°, the heat of the spring being 185°. After proceeding for about one-third the length of the passage, he began to feel a sense of oppression and discomfort, his pulse rising from 70 to 90 beats in the minute. A short distance farther, the oppression increased, his breathing became rapid and panting, and he was under the necessity of stooping his head frequently to the earth, in order to obtain a chestful of air of a less suffocating temperature. His skin, at this time, was bathed in profuse perspiration, his head throbbing, and his pulse beating 120 in the minute. Continuing his progress, the sensations of suffocation became insupportable; his head felt as though it would burst; his pulse was so rapid as to defy calculation; he was exhausted and nearly unconscious; and it required all his remaining power to enable him to hurry back to the open air. On reaching the mouth of the passage he staggered, and nearly fainted, and was very uncomfortable until relieved by a bleeding from the nose. During the rest of the day his pulse remained at 100; he had uneasy sensations over the surface of the body, and did not recover until after a night's repose. The same gentleman bore a temperature of 176° in dry air without inconvenience.[1]

The recent experiments of Fourcault[2] throw considerable light on the importance to health of the secreting function of the skin. These experiments were instituted for the purpose of illustrating a theory of the author, that suppression of cutaneous transpiration is a potent cause of chronic disease, and especially of scrofula and pulmonary consumption, diseases which he traces to the conjoint effect of a cold and damp atmosphere, and the absence of sufficient exercise to promote healthy perspiration. M. Fourcault endeavored to suppress the action of the skin in animals by means of an impermeable varnish; and, as a consequence of this operation, caused vicarious congestion of the mucous membranes, and also of the serous membranes and nervous system. A horse had intense congestion of the mucous membrane of the nasal passages and a profuse discharge; sheep equally suffered with congestion of the Schneiderian membrane and coryza; while dogs were seized with inflammation of the bowels, and enlargement with congestion of the liver. The respiration became oppressed and laborious, and the animal died in a short space of time of asphyxia, often accompanied with convulsions. In an animal in whom only one side of the body was varnished, the cutaneous capillaries of that side were found gorged with dark-colored blood, while on the opposite side the blood was of a scarlet hue, and small in quantity. In the majority of the animals examined after death, the veins near the heart were found distended with black soft coagula, and in some there were ecchymoses in the lungs. Fourcault found that animals deprived of their skin survived longer than those covered with varnish; and reminds us of the poor child, intended to represent the golden age at the election of Pope Leo, the Tenth, who, being covered with gilding, soon after died from the effects of the process. Becquerel and Breschet, repeating the experiments of Fourcault in reference to animal temperature, conceived that if they prevented transpiration by the skin, they could induce internal fever; the contrary, however, was the fact. After the application of a thick layer of varnish upon the skin of a rabbit, and adjusting their thermo-electric needles, they found the temperature of the deep muscles, in the course of half an hour, reduced from 100° to 89°; in another half-hour to 76°; and in a third half-hour it stood at only 3° above the temperature of the atmosphere, 63°; so that, in the course of an hour and a half, the temperature of the animal had fallen 34°, and the creature died. Fourcault also produced albuminuria in dogs by a similar expedient; the first change perceptible in the urine was a diminution of its acid reaction; then albumen became apparent, and at the same time the urine was alkaline. He conceives that the detention of the lactic acid salts in the blood destroys the equilibrium of organic affinities, and leads to the elimination of the albuminous element of the blood.

---

[1] Gazette Médicale, April 27, 1844.

[2] Examinateur Médicale, Oct. 1811.

The chemical constituents of perspiration are water, nitrogen, animal extract, fat; carbonic acids with its salts, carbonates of soda and lime; lactic acid with its compound, lactate of ammonia; acetic acid, acetate of soda, butyric acid, chloride of sodium, hydrochlorate of ammonia, phosphate of soda and lime, sulphate of soda, salts of potash, and peroxide of iron. Anselmino gives the following analysis[1] of the dried residue of the perspiratory secretion. In one hundred parts there were of—

Matters insoluble in water and alcohol, chiefly calcareous salts, . .	2
Animal matter soluble in water, insoluble in alcohol, regarded by Anselmino as salivary matter (?), and sulphates	21
Matters soluble in dilute alcohol; chloride of sodium and osmazome,	48
Matter soluble in alcohol, osmazome, and lactates, ...	29

Simon collected the perspiratory fluid from the arms and face, and found it to be a turbid, dirty-looking fluid, which deposited gray floccules on standing. By the microscope these floccules were ascertained to be epidermal cells. The specific gravity of the fluid was in one instance 1003, and in another 1004. It was slightly acid at first, but became neutral on standing for twenty-fours hours; and a rod moistened with hydrochloric acid, held over it at this period, detected the vapor of ammonia. The results of the investigations of Simon establish the existence in the normal perspiratory secretion, of—

"Substances soluble in ether: traces of fat, sometimes including butyric acid.

---

[1] Müller's Physiology, Translation, page 579.

"Substances soluble in alcohol: alcoholic extract, free lactic or acetic acid, chloride of sodium, lactates and acetates of potash and soda, lactate or hydrochlorate of ammonia.

"Substances soluble in water: watery extract, phosphate of lime, and occasionally an alkaline sulphate.

"Substances insoluble in water: desquamated epithelium and (after the removal of the free lactic acid by alcohol) phosphate of lime, with a little peroxide of iron."[1]

Dr. Landerer found urea in healthy perspiration in addition to phosphates, sulphates, acetates, lactates, chloride of sodium, and osmazome.[2]

Dr. P. A. Favre sums up his researches on the chemical composition of the perspiration as follows: Its solid components, with the exception of a trace, are soluble in water; its predominant salt is chloride of sodium; alkaline sulphates exist in it in very small quantity; alkaline and earthy phosphates are barely discoverable; lactic acid is present in the form of lactates; it possesses a peculiar nitrogenous acid, *sudoric acid*, resembling uric acid in its chemical nature; the new acid is combined with alkalies, but uric acid never occurs; urea is present; there is but little oily or albuminous matter; the latter is in combination with the alkalies; the potash is chiefly combined with the organic acids, the soda with the mineral acids; the composition of the perspiration obtained under similar circumstances, but at different periods, is generally similar; the organic salts exceed the mineral salts at the beginning of perspiration, and *vice versâ;* the proportion of water to the solid constituents remains the same during the entire continuance of forced perspiration.[3]

Our information with regard to morbid perspiration is very limited and unsatisfactory. Simon made the analysis of this secretion, obtained from a man who had been the subject of alphos for seventeen years; but his results are inconclusive, from the fluid being in a state of decomposition. Its specific gravity was 1008; it smelt strongly of hydrosulphate of ammonia, and gave off, when evaporated, a penetrating odor of sulphuretted hydrogen, which ultimately merged into a nauseous animal smell. "It yielded 9.9 of solid constituents, which, after being exposed to the influence of a red heat, were found to consist of a large proportion of chloride of sodium, carbonate of soda, a little phosphate of lime, and a fair amount of sulphuric acid." The perspiration of "persons with the itch is said to have a mouldy odor." And "according to Stark, the quantity of free lactic acid is increased" in certain cutaneous affections.

The gases of the perspiratory secretion, namely, carbonic acid and nitrogen, are exhaled in largest quantity after meals or violent exertion, the former being most abundant where the food has been vegetable, and the latter where the food has been animal.[4] The quantity of water excreted by the skin bears reference to the circumstances above detailed, namely, the comparative activity of the exhaling organs, the condition of the atmosphere, and the state of the system. The nitrogen, according to Liebig, originates chiefly in the decomposition of the atmospheric air carried into the stomach with the saliva, or absorbed from the exterior by means of the skin. During digestion, the oxygen of the atmospheric air enters into combination with the food, and the nitrogen is set free to make its way by endosmosis through the stomach and diaphragm into the lungs, or through the parietes of the body to the skin. It follows, therefore, that the quantity of nitrogen set free in the stomach, and, consequently, the quantity exhaled by the skin, is proportioned to the duration of digestion. Thus, in certain herbivorous animals in whom the process of digestion occupies a long period, and is further delayed by rumination, a large quantity of atmospheric air is conveyed into the stomach, and a larger proportion of nitrogen is extricated from the skin, than in carnivora. The same circumstance must take place when any cause exists which retards digestion. The quantity of carbon also bears reference to the nature of the ingesta; where a large quantity of carbonic acid is generated in the stomach, the gas makes it way directly to the lungs, as did the nitrogen, or to the skin. Dr. Dalton estimates the proportion of carbon eliminated by the skin, irrespective of variety in food, at one-twentieth of the entire quantity of perspiratory secretion. To the animal matters, the ammonia, the acetic acid, and the lactic acid, are to be ascribed the powerful odor of the perspiratory fluid, while its acid reaction is determined by the latter.

---

[1] Animal Chemistry with reference to the Physiology and Pathology of Man. By Dr. J. Franz Simon. Translated and edited by Dr. George E. Day, for the Sydenham Society, vol. ii. p. 103.

[2] Heller's Archiv., vol. iv. p. 196.

[3] Archives Générales de Médecine, vol. ii. 1853.

[4] Collard de Martigny, in Magendie's Journal, vol. x. p. 162.

CHAPTER II.

PATHOLOGY OF THE SKIN.

THE PATHOLOGY of the skin is similar to that of other organs of the body, and especially of those with which it most nearly coincides in structure, for example, the membranous organs, and notably the mucous membranes; any differences of manifestation which it may present having reference to the external position of the integument, its great extent, and its peculiar relation to deeper seated parts. Like other organs, it is subject to inflammation, in which all its tissues are more or less involved; to morbid conditions of its special component structures, namely, its nerves, bloodvessels, and blood; to alterations having reference to development, nutrition, and growth; to metamorphosis of tissue; and to morbid states of its epidermal and capillary covering, and of its glandular apparatus.

Inflammation of the skin is denoted by redness, pain, heat, and more or less swelling. The *redness* is sometimes uniform, sometimes punctated, sometimes general, and sometimes partial; sometimes it has the scarlet hue of arterial blood, and sometimes the purple tint of venous blood, or the deep livid hues of blood in a state of stagnation. The uniform flush of redness is due to congestion of the entire vascular rete of the skin, and particularly the horizontal capillary plexus; the punctated redness, to congestion of the vertical or follicular capillary plexus; general redness is commonly associated with constitutional excitement of the circulation; while local redness may depend upon a partial manifestation of a constitutional cause, or upon local causes. Simple vascular congestion of the skin, or hyperæmia, is termed *erythema*,[1] a word signifying redness; while from the same Greek root is derived the term *erysipelas*. The erythema which accompanies the eruptive fevers, rubeola, scarlatina, and variola, is termed *exanthema*, and the fevers themselves exanthemata. An erythema is, in general, a state of congestion or hyperæmia of the horizontal or surface capillary plexus, but an exanthema is always punctated, in consequence of the congestion attacking the glandular system of the skin. In rubeola this punctated character is very manifest; so also is it in scarlatina, in which it causes an elevation of the pores of the follicles into minute papulæ; while, in variola, the congestion of the follicles, beginning as puncta, passes through the subsequent forms of papules, vesicles, and pustules. One kind of erythema, namely, roseola, is usually punctated; it holds a position intermediate between erythema and exanthema, and is commonly denominated "false measles."

An erythema may be bright in color, or it may be dull, varieties which are ordinarily due to differences of energy of circulation through the capillary plexus; but the tint of general erythema approaches more or less closely to arterial blood; scarlatina is remarkable for its scarlet or arterial redness; and rubeola for its purplish-red or raspberry hue; while roseola, like rubeola, is distinguished by a roseate tint. Another modification of color is seen in syphilitic eruptions and in elephantiasis, a dull coppery red, that seems to be occasioned rather by a discoloration of the skin than of the blood. The redness of elephantiasis is sometimes a bright pink, sometimes lilac, then purple, livid and leaden, and sometimes brownish; and in morphœa the redness is often lilac or delicately purple. Varieties of redness are also recognized in other affections, as in eczema, in the pityriasis rubra of Hebra, in alphos, in scrofuloderma, and in lupus; while in urticaria, the red ground is mottled with white elevations, resulting from muscular spasm of the derma.

Cutaneous affections differ from other diseases, more perhaps in the nature of the local suffering by which they are accompanied, than in any other respect. The commonest form of pain is itching, to which may be added a morbid sense of heat and cold, together with tingling, pricking, darting, shooting, creeping, and, in deep-seated affections, weight and throbbing. Itching, or pruritus, would sometimes seem to result from the stimulus of the ordinary capillary circulation upon a weakened tissue; sometimes from inordinate circulation; sometimes from pressure caused by congestion; sometimes from the pressure accompanying exudation into the tissues; and sometimes it seems to take origin in the nerves, and be in its nature neurotic, constituting a species of neuralgia. The first symptom of an incipient eruption is, not unfrequently, itching, and a large group of cutaneous disorders are distinguished especially by this symptom, and are termed pruriginous affections. Itching brings to its relief scratching—hence the *psora* of the Greeks, the *scabies* of the Latins, both corresponding with the *eczema* of our own times. The papular eruptions are remarkable for the severity of their itching; the itching depending obviously on the congestion and infiltration which constitute the mass of the pimple; for if the pimple be torn, and a drop of lymph or blood escape from its summit, the itching is immediately at an end. The *lichen agrius* is an example of inveterate itching, as is also that form of lichenous or papular eruption which is denominated *prurigo*. Itching is also remarkable for its energy in chronic thickening of the skin, such as follows prolonged hyperæmia, or hyperæmia with infiltration, as in the dry forms of psora, namely, *psoriasis*, the chronic and squamous stage of eczema, and in pityriasis.

---

[1] For the derivation and signification of this term, and other technical terms, the reader is referred to the "Glossary" at the end of the volume.

Itching, as a consequence of the ordinary and extraordinary capillary circulation through the skin, is illustrated by the intense pruritus which in some instances accompanies the use of the cold bath, and in its influence upon weakened tissues, as in pernio or chilblain. Certain eruptions, such as alphos, are one while almost free from pruritus, and at other times the itching is severe; in the latter case, generally from the interposition of infiltration similar to that which occurs in chronic eczema. While certain other eruptions, although accompanied with ample vascular congestion, are remarkable for their freedom from itching. Such is the case with the syphilitic eruptions; the absence of pruritus being one of the characteristic signs of those affections.

Pruritus, which is local at first, is sometimes propagated to the cerebro-spinal system, and gives rise to a graver form of nervous irritation, one in which frantic and almost convulsive efforts are made to appease the itching. At other times, from the first, or as the result of continued irritation acting upon a susceptible temperament, the character of the suffering is of a neuralgic character, either a severe shooting pain, or a pain in which burning and pricking and tingling are combined; the latter is the kind of pain which accompanies herpes zoster, and has gained for it the name of zona ignea, while its pathological status is regarded as a neurosis. Sensations of biting and creeping are also neuralgic, and the latter possibly influenced by the muscular movements of the skin.

Heat must be regarded as the natural result of the heightened action of the morbid tissues; and certain flushes and chills which are commonly associated with hyperæmic eruptions of considerable extent, such as eczema, must be looked upon as depending upon disordered innervation of the skin.

Swelling is always present in hyperæmia, although its degree in erythema and in the exanthemata is often very trifling; while in certain forms of erythema, such as the varieties termed papulatum, tuberculatum, nodosum, and tumescens, the swelling is considerable, and is sometimes increased, as in erysipelas, by an œdematous infiltration of the derma, or of the subcutaneous tissue. The first effect of motion of the skin, until the latter becomes smooth and tumid. The swelling of the tissues immediately surrounding the cutaneous follicles occasions papulæ; and the extension of this process gives rise to tubercles of various size, and of various degrees of prominence and hardness. In this way are produced the cones and tubercles of acne, sycosis, the papules and tubercles of syphiloderma, the tubercles of scrofuloderma, the tubercles of tubercular leprosy, and the brawnlike and infiltrated blotches of elephantiasis anæsthetica. Certain of these swellings are temporary, and accompanied with cutaneous muscular spasm, such as urticaria, lichen urticatus, and some of the forms of erythema; but others, resulting from infiltration into the tissues of the part, are more or less permanent; such is the case in a moderate degree with erythema nodosum, but in a greater degree with acne, sycosis, syphiloderma, scrofuloderma, and elephantiasis tuberculosa. When of a chronic nature, tubercles sometimes terminate by ulceration.

A tendency to spread, to run on by the circumference, to occupy fresh ground, sometimes deserting the old, and sometimes simply enlarging, is a common character of cutaneous affections, as it is of inflammation of surface membranes in general. Sometimes the spreading takes place in one or several directions without regularity; at other times the extension proceeds from a centre, and the periphery increases uniformly; and sometimes, again, the movement is centrifugal, the congestion subsides in the centre, the skin returning to its normal condition, while the circumferential ring encroaches more and more on neighboring parts. The first kind of extension is met with in erysipelas, so remarkable for its migratory habits; the second is seen in pemphigus, in herpes iris, and in the early stages of tuberculous syphiloderma and alphos; the third or annular form of increase is observed in roseola annulata, erythema circinatum, lichen circinatus, tinea annulata, herpes circinatus, tuberculous syphiloderma, and in the latter or dispersing stage of alphos. In some instances the movement of extension is rapid, rings are formed in the course of a few days; in others, as in alphos, the process is slow, occupying several months; in certain forms of erythema, the annuli are narrow, in others the congested band retains a breadth of half an inch or an inch. In the chronic examples of centrifugal dispersion, as in alphos, the ring, after attaining a certain size, breaks up into segments, and the segments not unfrequently into isolated patches. These irregular figures have suggested the term *gyrated* as applied to alphos, and especially to certain forms of centrifugal tuberculous syphiloderma; the annular form may be converted into a **C**, the approximation of two rings may produce an **8** or an **S**, three rings would form a trefoil, and so on for a variety of figures.

Hyperæmia or inflammation, wherever it occur, is accompanied with disturbance of nutrition and derangement of function, and the skin is no exception to this general law; innervation is disordered, as we see by the production of itching and other forms of pain; the harmony of relation of the fluid and solid elements of the part is disarranged, as we observe in the tendency to exudation and infiltration into the tissues; secretion is suspended, and so also is the process of cell-formation concerned in the production of the epidermis. The cause of all these changes is the lowered vitality of the organ, whilst a return to the state of health demands a gradual restoration of vital power. In simple hyperæmia or erythema, the loss of tone and contractile power is marked, when the congestion subsides, by a wrinkled appearance of the surface, and the suspension of epidermic formation by exfoliation of the cuticle in layers of varying thickness and varying extent; sometimes the cuticular exuviæ are small and thin, and may be compared to bran, that is, they are furfuraceous or pityriaceous, as in pityriasis; at other times they are larger, as in the chronic form of eczema, denominated psoriasis; and, again, they may be of considerable extent, as in rubeola and variola, and especially in scarlatina; in the latter eruption it is no uncommon thing to find the whole of the cuticle of the hand or foot thrown off by exfoliation in a single piece.

Suspension of cell-formation in the production of cuticle, and consequent exfoliation or desquamation of that layer, is one of the pathological alterations or lesions resulting from inflammation of the skin; but besides cuticular desquamation, there are other changes which are denominated "lesions;" for example, papulation, or the production of papulæ, termed tubercula; vesiculation, or the production of vesicles, and larger vesicles called bullæ; pustulation, or the production of pustules; and squamation, or the production of scales of morbid cuticle. We may, therefore, consider the pathological lesions of the skin as divisible into two groups, primary and secondary; the primary lesions being vascular congestion, papulation, tuberculation, vesiculation, vesication, pustulation, and squamation; the secondary lesions, cuticular exfoliation or desquamation, serous and purulent secretions, crusts formed by the desiccation of those secretions, thickening and condensation of the skin from infiltration into its tissues, ulceration, and stains produced by the escape of blood into the cutaneous tissues, constituting hemorrhagic maculæ, or by excessive accumulation of pigment in the rete mucosum. The primary group of pathological lesions, together with the last named of the secondary lesions, is the basis of Willan's classification of cutaneous diseases, thus: exanthemata, papulæ, tubercula, vesiculæ, bullæ, pustulæ, squamæ, and maculæ; and it is to Willan that medical science is indebted for the precise definitions which have been affixed to these pathological lesions.

According to Willan, a PAPULA or pimple is "a very small and acuminated elevation" of the skin, "with an inflamed base, very seldom containing a fluid or suppurating, and commonly terminating in scurf." A SQUAMA or scale is "a lamina of morbid cuticle, hard, thickened, whitish, and opaque." EXANTHEMA or rash consists of "superficial red patches variously figured and diffused irregularly over the body, leaving interstices of a natural color, and terminating in cuticular exfoliations." BULLA or bleb is "a large portion of the cuticle detached from the skin by the interposition of a transparent watery fluid." **PUSTULA** is "an elevation of the cuticle, with an inflamed base, containing *pus*." **VESICULA** is "a small orbicular elevation of the cuticle, containing lymph, which is sometimes clear and colorless, but often opaque, and whitish or pearl colored." **TUBERCULUM** is "a small hard superficial tumor, circumscribed and permanent, or suppurating partially." **MACULA** or spot is "a permanent discoloration of some portion of the skin, often with a change of its texture."

In adopting the language of Willan, we prefer to take exanthema as the first instead of the third order, because it comprehends that vascular congestion or hyperæmia of the skin which is the "fons et origo" of the pathological changes constituting the rest of the orders, namely, papulæ, tubercula, vesiculæ, bullæ, pustulæ, and squamæ. But the arrangement adopted by Willan himself is not without its interest in a pathological point of view. Beginning with papulæ, which often, as he says, terminate in scurf, he takes as his second order, squamæ, a slightly elevated prominence, surmounted by a thicker kind of scurf, namely, a scale. Following in the next place with exanthemata, which includes erythema, he doubtless intended to note the rapid transition of an erythema into a bulla, by making the latter his fourth order. Then he takes pustulæ, and after pustulæ, vesiculæ, leaving tubercula and maculæ to complete the series.

We may therefore look upon inflammation of the skin as pursuing the usual and normal course of inflammation in general, making itself conspicuous by redness, infiltration of tissue, exudation of the colorless portion of the blood, and sometimes of the blood itself, and exudation of pus or suppuration, or, to adopt the language of cutaneous medicine, inflammation presents the states of erythema or exanthema, papulæ, vesiculæ, bullæ, pustulæ, and tubercula. It is no uncommon thing to observe the whole of these pathological forms developed in succession in the course of one and the same disease, and representing stages of inflammation, as in variola, wherein we find an erythematous, a papulous, a vesiculous, and a pustular stage. In scarlatina the normal stages are only two, erythematous and papulous; but abnormally we sometimes meet with a vesiculous, and sometimes with a pustulous stage, superadded to the usual forms. The poison of syphilis, again, is remarkable for presenting a multiple form in its development on the skin; being one while erythematous, then papulous, sometimes pustulous, sometimes vesiculous, and sometimes tuberculous. We may, therefore, regard these pathological forms in the twofold character of types of eruption and as stages of inflammation. In the former capacity they constitute so many groups of diseases, as is exemplified by the classification of Willan; in the latter they serve to mark the successive changes and the precise form of the same disease at different periods of its growth; and dermatography derives important help from the use of the terms erythematosum, papulosum, vesiculosum, bullosum, tuberculosum, squamosum, maculosum, &c.

ERYTHEMA, taken as a type of cutaneous disease, is intended to express simple redness, resulting from superficial hyperæmia of the skin, and without any secondary changes, with the exception of cuticular exfoliation. The redness may be a general suffusion, or it may be punctated, according to the precise seat of the congestion, whether affecting chiefly the surface capillary plexus or that of the follicles. It is sometimes stationary, sometimes spreading, and sometimes migratory. Sometimes it is accompanied with swelling, the result of contractility of the skin and transient effusion, and sometimes with a more permanent state of effusion, constituting œdema. In the latter case, the distended tissues may relieve themselves by effusion of serum beneath the cuticle, and become an erythema bullosum; a pathological state, common in erysipelas. Erythema and erysipelas are chiefly distinguished by the extent of the inflammation in depth; in erythema the hyperæmia is very superficial, commonly reaching no deeper than the papillary layer of the derma; whereas in erysipelas, the whole thickness of the derma, together with the subcutaneous cellular tissue, is involved; besides hyperæmia there is dermatitis and cellulitis, and the disorder is consequently more grave. But erythema, when it attacks certain parts of the body, such as the eyelids—which are prone to swelling—may be accompanied with so much tumefaction as to admit of being easily confounded with erysipelas, and the diagnosis is somewhat difficult. The erysipelas which could be so mistaken, must, however, be slight; in its more decided form, associated with dermatitis and cellulitis, the difficulty is very unlikely to occur. Tumefaction is sometimes a remarkable concomitant of erythema, as in the papulous, the tuberculous, and nodose forms of that eruption, and especially in the tumescent form. In the latter, the swelling rises to a considerable height in the course of a few hours, sometimes blocking up the eyes, sometimes enlarging the lips and tongue almost to the extent of producing suffocation, and in another interval of a few hours subsiding completely. In the latter case, there is present all the tumefaction of erysipelas; but the dermatitis and the œdema are obviously absent. Another occasional symptom of erythema is a pricking, and tingling, and intense itching of the skin; this symptom is generally present in erythema tumescens, but is most remarkable in association with urticaria. In the latter affection there also exists a spasmodic condition of the muscular structure of the skin. Muscular spasm of the skin is not limited to urticaria, but is met with in other forms of eruption, and has suggested the term *urticatus*, as in the instance of a papular eruption of children, termed lichen urticatus, and it is also associated occasionally with scabies and purpura. The extreme tingling and pricking are suggestive of an irritation of the cutaneous nerves, and the symptom is indicative of a neurosis.

When erythema has been in existence for a considerable time, the skin is apt to become thickened from infiltration into its tissue, and the surface is rendered coarse and uneven. In this state the cuticle no longer exfoliates in a single layer, as occurs in the more recent period of hyperæmia, but is produced and cast in small flakes or scales, which have sometimes been compared to bran, furfuraceous or pityriaceous, and sometimes to meal, farinaceous; this is the form of affection which has received the name of *pityriasis*, and, in reference to its scaly product, has been described as a squamous disorder. Not unfrequently the hard and inelastic skin breaks into cracks under the movements of the part, and bleeding fissures and chaps are sometimes superadded to the desquamation; we have an example of this form of affection in the erythema a gelu, which gives rise to "chapped hands" in the winter season; and in the erythema produced by the prolonged action of moisture, as of morbid secretions, upon the skin.

Erythema is pre-eminently a hyperæmia of the papillary layer of the derma; but many cutaneous affections evince a special disposition to attack the follicular and glandular structure of the skin; and as the position of the follicular plexus is vertical to the surface, the result of the hyperæmia is a punctated appearance of the skin, the red puncta corresponding with the pores of excretory outlets of the follicles. In some instances, it may be that the effort of the constitution is eliminatory, and the vascular congestion is determined towards the secreting organ; in others, an error of secretion may be the cause of the congestion; or it may be that the inflected surface is more sensitive than that which is exposed habitually to the atmosphere. Without stopping to discuss these incidental questions, we may observe, that the congestion of the follicles is remarkable in the exanthemata resulting from zymotic poisons, in roseola corymbosa and punctata, and also in the syphilodermata, and in these affections we have the best evidence of the pathology of papulæ. Under the influence of that muscular contraction of the skin which is termed spasmus periphericus, we perceive a state of erection of the follicles, the cutis anserina, which is temporary, and subsides with the muscular spasm. So, when the vascular rete of the follicles is distended in hyperæmia, the outlets of the follicles are raised above the level of the surface of the skin and constitute papulæ; and the size and permanence of the papulæ will depend upon the degree of congestion of the bloodvessels and the subsequent phenomena of inflammation. The congestion is accompanied with exudation into the intervascular tissue, and an enlargement takes place, which is evident on the surface as a pimple, more or less conical in form, and hard to the touch. In this way are produced the papulæ of rubeola, scarlatina, and variola; the subsequent changes in the latter being vesication and pustulation; in a similar manner, also, are produced the papules of syphiloderma papulosum, which occasionally becomes pustulous.

The typical papula of Willan is termed LICHEN, "summæ cutis asperitas;" lichen is a crop of papulæ produced in the manner already described; occupying the circumference of the pore or outlet of the follicle; hard to the touch; for the most part conical in figure; and perforated at the summit by the aperture of the follicle more or less compressed by the surrounding infiltration. On close inspection, the papule of lichen is seen to be transparent at the summit from the elevation of the cone of cuticle which occupies the aperture of the follicle; and this transparency has led to the supposition of the presence of fluid, a supposition which is evidently erroneous. The papulæ of lichen present some variety of size, and also of figure; they are small and hard on the thicker parts of the skin and on the outside of the limbs; larger on the softer skin of the front of the body, the inside of exfoliation. The redness may be a general suffusion, or it may be punctated, according to the precise seat of the congestion, whether affecting chiefly the surface capillary plexus or that of the follicles. It is sometimes stationary, sometimes spreading, and sometimes migratory. Sometimes it is accompanied with swelling, the result of contractility of the skin and transient effusion, and sometimes with a more permanent state of effusion, constituting œdema. In the latter case, the distended tissues may relieve themselves by effusion of serum beneath the cuticle, and become an erythema bullosum; a pathological state, common in erysipelas. Erythema and erysipelas are chiefly distinguished by the extent of the inflammation in depth; in erythema the hyperæmia is very superficial, commonly reaching no deeper than the papillary layer of the derma; whereas in erysipelas, the whole thickness of the derma, together with the subcutaneous cellular tissue, is involved; besides hyperæmia there is dermatitis and cellulitis, and the disorder is consequently more grave. But erythema, when it attacks certain parts of the body, such as the eyelids—which are prone to swelling—may be accompanied with so much tumefaction as to admit of being easily confounded with erysipelas, and the diagnosis is somewhat difficult. The erysipelas which could be so mistaken, must, however, be slight; in its more decided form, associated with dermatitis and cellulitis, the difficulty is very unlikely to occur. Tumefaction is sometimes a remarkable concomitant of erythema, as in the papulous, the tuberculous, and nodose forms of that eruption, and especially in the tumescent form. In the latter, the swelling rises to a considerable height in the course of a few hours, sometimes blocking up the eyes, sometimes enlarging the lips and tongue almost to the extent of producing suffocation, and in another interval of a few hours subsiding completely. In the latter case, there is present all the tumefaction of erysipelas; but the dermatitis and the œdema are obviously absent. Another occasional symptom of erythema is a pricking, and tingling, and intense itching of the skin; this symptom is generally present in erythema tumescens, but is most remarkable in association with urticaria. In the latter affection there also exists a spasmodic condition of the muscular structure of the skin. Muscular spasm of the skin is not limited to urticaria, but is met with in other forms of eruption, and has suggested the term *urticatus*, as in the instance of a papular eruption of children, termed lichen urticatus, and it is also associated occasionally with scabies and purpura. The extreme tingling and pricking are suggestive of an irritation of the cutaneous nerves, and the symptom is indicative of a neurosis.

When erythema has been in existence for a considerable time, the skin is apt to become thickened from infiltration into its tissue, and the surface is rendered coarse and uneven. In this state the cuticle no longer exfoliates in a single layer, as occurs in the more recent period of hyperæmia, but is produced and cast in small flakes or scales, which have sometimes been compared to bran, furfuraceous or pityriaceous, and sometimes to meal, farinaceous; this is the form of affection which has received the name of *pityriasis*, and, in reference to its scaly product, has been described as a squamous disorder. Not unfrequently the hard and inelastic skin breaks into cracks under the movements of the part, and bleeding fissures and chaps are sometimes superadded to the desquamation; we have an example of this form of affection in the erythema a gelu, which gives rise to "chapped hands" in the winter season; and in the erythema produced by the prolonged action of moisture, as of morbid secretions, upon the skin.

Erythema is pre-eminently a hyperæmia of the papillary layer of the derma; but many cutaneous affections evince a special disposition to attack the follicular and glandular structure of the skin; and as the position of the follicular plexus is vertical to the surface, the result of the hyperæmia is a punctated appearance of the skin, the red puncta corresponding with the pores of excretory outlets of the follicles. In some instances, it may be that the effort of the constitution is eliminatory, and the vascular congestion is determined towards the secreting organ; in others, an error of secretion may be the cause of the congestion; or it may be that the inflected surface is more sensitive than that which is exposed habitually to the atmosphere. Without stopping to discuss these incidental questions, we may observe, that the congestion of the follicles is remarkable in the exanthemata resulting from zymotic poisons, in roseola corymbosa and punctata, and also in the syphilodermata, and in these affections we have the best evidence of the pathology of papulæ. Under the influence of that muscular contraction of the skin which is termed spasmus periphericus, we perceive a state of erection of the follicles, the cutis anserina, which is temporary, and subsides with the muscular spasm. So, when the vascular rete of the follicles is distended in hyperæmia, the outlets of the follicles are raised above the level of the surface of the skin and constitute papulæ; and the size and permanence of the papulæ will depend upon the degree of congestion of the bloodvessels and the subsequent phenomena of inflammation. The congestion is accompanied with exudation into the intervascular tissue, and an enlargement takes place, which is evident on the surface as a pimple, more or less conical in form, and hard to the touch. In this way are produced the papulæ of rubeola, scarlatina, and variola; the subsequent changes in the latter being vesication and pustulation; in a similar manner, also, are produced the papules of syphiloderma papulosum, which occasionally becomes pustulous.

The typical papula of Willan is termed LICHEN, "summæ cutis asperitas;" lichen is a crop of papulæ produced in the manner already described; occupying the circumference of the pore or outlet of the follicle; hard to the touch; for the most part conical in figure; and perforated at the summit by the aperture of the follicle more or less compressed by the surrounding infiltration. On close inspection, the papule of lichen is seen to be transparent at the summit from the elevation of the cone of cuticle which occupies the aperture of the follicle; and this transparency has led to the supposition of the presence of fluid, a supposition which is evidently erroneous. The papules of lichen present some variety of size, and also of figure; they are small and hard on the thicker parts of the skin, and on the outside of the limbs; larger on the softer skin of the front of the body, the inside of the limbs, the neck and the face; they are large also on the thin and soft skin of infants, where they are called *strophulus*, and they are absent altogether on the scalp, and on the palmar and plantar surface of the hands and feet. They are large also in gutta rosacea, and are remarkable for their size in lichen syphiliticus or syphiloderma papulosum. And they are large and flat, depressed on the summit, and angular in outline, in a form of the eruption which we have described under the name of lichen planus, and which corresponds with the lichen ruber of Hebra.

Papulæ are remarkable for their disposition to itch; and the papular eruptions are generally pruriginous: this is the case with lichen, one variety of which is distinguished as lichen pruriginosus; it is seen also in the papulæ of eczema and scabies, and has given origin to the term "prurigo," as applied to one of the varieties of papular eruption. Another of the varieties of lichen has received the name "agrius," from the fierceness and intensity of the itching by which it is accompanied; and the only exception to the itching character of lichen is met with in lichen syphiliticus, which, like other forms of cutaneous syphilis, is distinguished by the absence of pruritus.

When a papule pursues its normal pathological course, and is approaching its decline, the cuticle covering its summit becomes loosened and falls off in a small thin scale; but if the skin be infiltrated with serum, and there be much itching, as occurs in lichen agrius, and if the pimples be rubbed or scratched, they become excoriated, and exude a watery discharge. The discharge does not commence by the formation of a vesicle, as in eczema, but resembles the second stage of eczema, when exudation is poured out from the excoriated and inflamed derma. Such an observation brings before us the true characteristics of lichen, which is a dry pimple, as compared with eczema, which is a moist pimple or vesicle; and it further affords the clearest evidence, that the difference between lichen and eczema is not one of nature, but simply of manifestation, the ichorous element being as we have seen, subordinate to the infiltration of the tissue of skin. Lichen agrius, therefore, that is, a papular eruption with ichorous exudation, is a lichen plus an eczema; in other words, it is a lichen ichorosus, or lichen eczematosus. As a further proof of the identity of the two affections, it may be observed that they are very commonly seen together; in one part the papulæ are moist and ichorous, in another dry; hence, modern dermatology has sanctioned the consideration of both under the single term, eczema. When papulæ are permanently dry, they are called lichen; when they become moist they constitute an eczema papulosum or lichenodes.

When lichen appears as an eruption of some extent, or as a general eruption, it passes very quickly into a desquamating state, and becomes a lichen squamosus, an eruption of dry pimples, attended with a copious exfoliation of cuticle in the form of furfuraceous scales. In the moist form, the exuded fluids dry up into crusts, which are thin or thick, yellowish or gray, brown or black, according to the nature and abundance of the exudation. In either case, if the hyperæmia continue for a considerable period, the derma becomes thickened from infiltration; it is uneven on the surface; it breaks into chaps, caused by the movements of the body; it has periodical fits of violent pruritus; and it throws off a copious desquamation of dry furfuraceous scales. This is the state which is properly denominated psoriasis, which resembles the chronic stage of erythema, termed pityriasis, and which is identical with the similar chronic stage of eczema.

The type VESICULÆ is eczema, "eas εκζεματα, ab ebulliente fervore, Græci vulgo appellant," writes Ætius, in the fifth or sixth century. The term is suggestive of the seething and bubbling of a boiling fluid, and conveys the idea, not only of vesicular bubbles thrown up to the surface, but also of an inward heat which causes their production. If the skin be stimulated by an irritant, such as the heat of the sun's rays, there may be developed on the surface, either papulæ, when the case would be termed lichen solaris, or minute vesicles, when the case would be one of eczema solare or eczema vesiculare; the difference, as far as the eruption is concerned, is the difference of a Willanean order, the one being papular, the other vesicular. The difference of pathological nature is, exudation into the cutaneous tissue in one, and exudation out of the cutaneous tissue, namely, on the surface in the other; the cause is the same in both, the disease equally the same, only differing in manifestation, differing in the accidental qualities of the part or of the constitution. The phenomenon is still more striking when both forms of pathological lesion appear in the same individual, and at the same time: lichen, for example, on the back of the hands; eczema on the face. It is facts such as these that have led modern authors to consider lichen and eczema as being closely allied, in some instances identical, and have suggested the use of the terms eczema papulosum, equivalent to eczema lichenodes or lichenosum, and eczema vesiculosum. The same train of reasoning has established the distinction of lichen and eczema to be; the former a dry pimple, never assuming a moist stage; and the latter, a vesicle or a moist papule. But the fact cannot be denied, that a papule may at any time pass into a moist stage; and, therefore, the necessity has arisen for a more comprehensive definition of eczema than that given by Willan. Eczema may be a mere hyperæmia, eczema erythematosum; it may be a papule, eczema papulosum; it may be a vesicle, eczema vesiculosum; or a pustule, eczema pustulosum; it may be an inflamed skin pouring forth a copious exudation, eczema ichorosum; or, the exudation may have dried upon the surface into crusts, eczema crustosum, or scales, eczema squamosum, &c. In other words, an eczema may be perfect in its manifestation without the presence of a single vesicle; therefore, the recognition of eczema as a vesicular eruption must be accepted with a considerable amount of reservation.

The vesicle of eczema is the smallest of the cutaneous vesicles; it is sometimes apparent in the cuticle without being raised above the level of the surface; this is especially the case in the palm of the hands, in the sole of the feet, and on the fingers and toes where the cuticle is thick; it is generally very unequal in figure, and sometimes is confluent and multilocular. Its rarest form is that of a distinct vesicle. Its seat, like that of lichen, is the aperture of a follicle; and here, one or a small chaplet of vesicles, may be clustered; when single, its dome is hemispherical; and in some situations, as between the fingers, it is conical. A vesicle of larger dimensions, distinct in position, hemispherical in form, and dispersed upon the skin, is, from its size being similar to that of a millet seed, termed *miliaria*. And a still larger vesicle, assuming the bulk of a small pea, is met with in *herpes*. By the ancient Greeks, vesicles, and probably the vesicular eruptions, were termed *phlyctenæ;* and we still distinguish one of the varieties of herpes as herpes phlyctenodes.

The fluid of the vesiculæ is a transparent and colorless lymph, which, after a while, becomes slightly opaque, and, in the course of time, is prone to become purulent. Purulent vesicles are commonly termed *impetigo ;* and, in an attack of eczema, accompanied with much inflammation, there frequently occur small pustules, developed in the midst of the ichorous vesicles; this state of the eruption is called eczema impetiginodes, but is better expressed by the term eczema pustulosum. In the larger vesicle of miliaria, the scarlet hue of the congested derma is so reflected by its transparent medium, as to produce a red tint, miliaria rubra; while, in a semiopaque and lactescent change of the contained fluid, the vesicles are white and pearly, miliaria alba. The larger vesicles of herpes exhibit the same changes and in the same order, beginning with the transparency and brilliancy of water, some seeming pink from the reflection of their deep red base, then becoming lactescent and pearly, and lastly acquiring the yellow tint of pus. The vesicle of vaccinia passes through similar changes, and so also does that of variola.

When a vesicle takes the regular course already described, it ends as a thin crust or scab, which adheres to the skin for a time and is then cast off; such is the case with miliaria, and notably with herpes; and sometimes eczema follows a similar process. But in eczema, it frequently happens that an exudation continues after the vesicle is broken or rubbed off, and a red and inflamed surface is presented, denuded of epidermis, from which an oozing is taking place of a glutinous transparent lymph or ichor, in considerable quantity, reminding us of the flux from the mucous membrane of the nose in coryza, or that from the air passages in catarrh, or from the intestinal mucous membrane in diarrhœa; this is the eczema rubrum of Willan, also named eczema madidans and eczema ichorosum. The quantity of fluid in this way exuded from the skin is sometimes remarkable, amounting, where a large surface is concerned, to many ounces ; fold after fold of linen is soaked through, and the exudation for a time seems to be inexhaustible.

The vesicles of miliaria, herpes, vaccinia, and variola, have their regular course. The first becomes opalescent, and desiccates into a thin scab in the course of a few days. Some of the irregular forms of herpes do the same. Herpes itself passes through a purulent stage before it dries up; and so also do the vesicles of vaccinia and variola. But eczema has no specific course; it may linger for a while in the vesicular form, then become an exuding excoriation, and, after being incrusted for another while, the exudation may return.

In its least common and most favorable form, the skin may recover its normal state after exfoliation of its crusts; but most commonly, the skin becomes thickened, from infiltration into its tissues, coarse, hard, and uneven. Although it ceases to exude a fluid discharge, the epidermis is thrown off in thin scales: it is extremely itchy; bleeds when rubbed or scratched; frequently cracks in the direction of the lines of motion (eczema fissum), and assumes a persistent and chronic character. This is the state to which the term psoriasis is properly applicable, and corresponds with the chronic stage of erythema, termed pityriasis, and with the chronic stage of lichen. Eczema was called by the ancient Greeks, psora; and psoriasis is a derivative of psora, both in expression and in nature of disease.

The psora and eczema of the Greeks was called by the Latins scabies, hence the mutual association of these terms; but by scabies we at present understand a different affliction, of the nature of eczema, but originating in the presence of an animalcule in the skin, the acarus scabiei. Scabies is a good example of the multiple form often assumed by cutaneous disease; sometimes it is papular, sometimes vesicular, and sometimes pustular; while, for the most part, two of these forms are associated, and not unfrequently all are present together.

BULLÆ, as an eruption of magnified vesicles, may claim to take a position next to vesiculæ, although, from the development of the vesicles on a simple erythematous base, it is equally closely related to erythema, the place assigned to it by Willan. Their size is necessarily arbitrary; the vesicles, in some of the forms of herpes, not unfrequently attain a magnitude which makes it difficult to distinguish them from those of pemphigus; they are, in fact, small bullæ, and are as widely separated from eczema, with which they are associated by the intervention of miliaria, as they are from the group of the larger bullæ. On the other hand, bullæ, especially when solitary, may attain the dimensions of an egg or of an orange.

Bullæ are essentially asthenic, a simple effusion of serum beneath the cuticle raising it into the form of a bleb or bubble; hence the term pemphigus and pompholyx. The effused fluid is identical with the serum of the blood; aqueous, of a yellowish tint of color, and sometimes, when commingled with blood, more or less purple. In this respect, bullæ differ from the vesiculæ of eczema, the fluid contents of the latter being glutinous, and apt to pass into a muco-purulent state, a change less common in bullæ, or occurring only in their latter stage. We have an illustration of a bulla in the action of a vesicant upon the skin, in the æsthenic vesication of a chilblain, or in gangrene, in anasarca, in erysipelas bullosum, and in elephantiasis anæsthetica. The simplest erythema in some constitutions may terminate in a bulla, and especially, when a serous infiltration pervades the tissues, or takes place quickly as a consequence of hyperæmia. Miliaria, a vesicle produced under the relaxing effects of warmth and perspiration, may be regarded, in pathological nature, as a bulla of the smallest kind; the large vesicles of herpes zoster are more nearly allied to pemphigus, both as to neurotic origin and subsequent course than they are to eczema; and the vesicles of herpes phlyctenodes are undoubted bullæ in all their associations.

The alliance of erythema, herpes, and pemphigus, is strikingly manifested in herpes iris, which, in the frequent absence of a central vesicle, is termed erythema iris, and, in a different constitution of skin, is a pemphigus iris; and a combination of eczema and pemphigus is met with in a pruriginous form of eruption, termed by Hardy pemphigus pruriginosus. We have already noted the occasional hemorrhagic and neurotic character of bullæ; pemphigus is not unfrequently associated with purpura, sometimes with hemorrhage from the mucous membranes; and is often accompanied with burning heat, with tingling and pricking, and sometimes with neuralgic or rheumatic pain. Herpes zoster is a neurosis, sometimes preceded by neuralgia; an active hyperæmia follows the nervous disorder; there is a sensation of intense burning, sometimes a violent tingling and pricking, and after this, acute neuralgic pains of a darting and lancinating character. During the burning and tingling period the vesicles arise, and the contents of the vesicles, at first aqueous and transparent, shortly become lactescent, then yellowish, sometimes purplish, and finish by drying up into a black scab, firmly imbedded in the skin and closely adherent.

The form of pain accompanying vesicular eruptions is not without its interest; where the nervous plexus of the immediate surface is concerned the sensation is one of heat and pruritus; the vertical nervous fibrils give origin to burning, tingling, and pricking; deeper nerve fibrils produce darting, shooting, and lancinating pains; and, the trunks of the nerves, general aching and deep-seated pains. Eczema is an illustration of the first of these morbid states, pemphigus of the second, and herpes of the second and last.

The group of PUSTULÆ is represented by impetigo and ecthyma, to which Willan has added, under the name of porrigo, pustules occurring in the scalp, the pustules of scabies purulenta, and the pustules of variola. Impetigo we have already considered as the purulent stage or a pustular complication of eczema; and we have noted the possibility of the transition of eczema into impetigo, as in the example of eczema impetiginodes or eczema pustulosum. The pustules of impetigo are commonly very small and superficial, and, in many instances, they begin as vesicles, and gradually merge into pustules by the mere pyogenic alteration of their contents; moreover, in one very troublesome form of impetigo, which we have designated by the name of impetigo phlyctenodes, the eruption begins as a small pustule, and throws out, subsequently, around its circumference, an annular vesicle or phlyctena more or less complete. Again, impetigo is commonly met with where eczema is most frequent, as on the delicate skin of women and children, and especially on the face and head of infants, where it constitutes the crusta lactea.

The pustule of scabies is another illustration of a pustule in a superficial position, occupying the papillary layer of the derma, associated with vesicles, and, in truth, no better than a vesicle filled with a muco-purulent or purulent fluid. Scabies is essentially an eczema sisting of papulæ, vesiculæ, and pustulæ. If we were called to classify it upon the basis of its pathological lesions, we must place it amongst papulæ by virtue of its pimples, amongst vesiculæ in reference to its vesicular character, and among pustulæ in its least frequent and pustular form. Willan adopted the latter arrangement as an alternative of evils, and for the want of an order representing multiple forms. Even variola, which, in its pustular stage, must be admitted to be a true pustule, passes through the vesicular form as a transition stage.

Ecthyma is the only illustration of a pustule complete from its first development. It is the product of a deeper seated inflammation than that which accompanies impetigo; it has a hard, deeply red base; forms, on desiccation, a black imbedded scab, and leaves a cicatrix at its fall. In these particulars it resembles the pustule of variola, which also produces a thick imbedded scab and leaves behind it a cicatrix; while in impetigo there is formed only a thin crust, which separates without any permanent mark remaining. The chief differences between the pustule of impetigo and that of ecthyma, are, consequently, depth of tissue involved, and degree of inflammation: impetigo, mounting upwards in the pathological scale from the simple transudation that occasions a vesicle; and ecthyma, carrying the process onwards, through suppuration, to the deeper seated lesion that results in gangrene of the fibrous tissues of the derma, and occasions a furunculus and an anthrax.

The SQUAMÆ of Willan, constituting the squamous affections, are founded on the presence on the skin of laminæ of "morbid" cuticle; the determination of these diseases turns, therefore, upon the diagnosis of *morbid* cuticle. The desquamation of a blister, of the exanthemata and erythemata, of the vesiculæ, bullæ, papulæ, and pustulæ, is not sufficient to constitute a squamous affection, and for the simple reason, that the cuticle is not morbid, however morbid the process may be by which it is separated and displaced from the derma. Moreover, it would be irrational to designate as an independent disease that which, in reality, is nothing more than a stage of another disease. If we turn to the diseases included by Willan under the head of squamæ, we shall find as the first illustration, lepra and psoriasis, names applied by Willan to the same affection, to a disease which, to avoid confusion, we prefer to designate by its ancient name alphos. Now, the squama or scale of alphos is an undoubted example of "morbid" cuticle; it is white, with a metallic and sometimes silvery lustre, laminated, imbricated, opaque, and porous. Here, then, we recognize a true squamous affection, one in which the scale is the primary and essential character, for the morbid derma which produces it, and on which it rests, differs very little from the chronic congestion met with in other cutaneous diseases, so little, in fact, that Hebra conjoins it with lichen, and places it by the side of eczema under the head of exudata chronica.

If we take the term psoriasis as synonymous with lepra Willani, or more correctly, alphos, it must be regarded as a squamous affection; but if we look upon psoriasis as a modification of psora or

than they are to eczema; and the vesi
undoubted bullæ in all their associati
The alliance of erythema, herpes,
manifested in herpes iris, which, in
vesicle, is termed erythema iris, and
is a pemphigus iris; and a combin
met with in a pruriginous form o
phigus pruriginosus. We have
rhagic and neurotic character of
associated with purpura, sometin
membranes; and is often accom
ling and pricking, and someti
Herpes zoster is a neurosis,
active hyperæmia follows th
of intense burning, sometim
after this, acute neuralgic
ter. During the burning
the contents of the vesicl
become lactescent, then
drying up into a black sc
adherent.
The form of pain acc
its interest; where the
concerned the sensati
nervous fibrils give or
nerve fibrils produc
the trunks of the ner
zema is an illustrati
of the second, and
The group of
to which Willan
curring in the
of variola.
stage or a pust
possibility of
ple of eczem
impetigo ar
stances, the
the mere
troubleso
of impet
throws
cle or p
met wi
women
where
Th
perfi
ated
mu

a squamous affection,
eczema, and often, in
be distinguished with
distinction is essential,
alphos, there is always
ing a squama of morbid
cuticle. The same obser-
of pityriasis is one of sound
in the case of alphos, the type

ed in Willan's group, namely, ich-
on of squama, a lamina of morbid
ous affection; nevertheless, there is
and ichthyosis, and we recognize
ent which brings together such dis-
morbid cuticle developed by alphos
up in a previously healthy skin;
ichthyosis, is the consequence of
and is not morbid, but simply abnor-
ed us to regard alphos as a peculiar
ery other disease of the skin, and to
group of "alphous affections;" ichthy-
velopmental and nutritive affections,"
we look upon psoriasis as a squam-
asis, as a squamous erythema. Hebra
and regarding the epidermal product,
which produces it, distinguishes it as
is conjoined with hypertrophy of the

alphos and ichthyosis, are accompa-
such pruritus, when it exists, being the
the dermal tissues in the early stages
ation of the sensitive surface of the skin
affections. But pityriasis vulgaris and
their pruritic tendencies, the pruritus
ation of the derma. Alphos, like papulæ,
its first appearance in the skin at the
is hardly to be distinguished in size and
lichen; by degrees, a small white cap of
the summit of the papule, the papula then
without increasing in height, and the
in proportion. By this process, the scale
bricated, and when the papule has grown to
an inch in diameter, slightly raised at the
ssed in the centre, the scale presents a
and the patient looks as if he were stuck over
hand and to the eye, the surface is leprous
organ recognizes the most conspicuous charac-
truly alphous, albus, white. It warrants the
the Hebrews, namely, "Berat Boak;" the dull

white spot or leprosy, and the equally significant designation of the Greeks, "lepra alphos," and of the Latins, "vitiligo alphos."

Alphos is remarkable for symmetry of arrangement on the skin, and for its selection of certain situations, for example, the convex side of the elbows and knees, the scalp, the coarse skin of the outer side of the limbs, the trunk, the back of the hands, and the nails, while it is rare on the face and neck, the bend of the joints, and the inside of the limbs. The portion of skin attacked by the disease is thickened and hard, is apt to break during the movements of the body into chaps, from which a few drops of blood exude, and bleeds easily on scratching with the nails. In their normal state, there is never much congestion in and around the patches, but, they are prone to sympathize with the morbid state of the constitution; they are highly congested and very itchy in gout, and they become hot and inflamed, and pour out a watery ichor in eczema. But these symptoms it must be remembered, do not belong essentially to alphos, they are merely accidental.

One of the special characters of alphos we have already referred to, when we describe it as arising as a mere pimple, and increasing in dimensions by peripheral growth until it attained the diameter of an inch or more. This is its progressive stage, constituting alphos circinatus; but, having attained its full size, the desquamation begins to cease in the centre, and the skin to recover its natural appearance. This is the beginning of a retrograde stage; the dimensions of the area enlarge, while the circumference continues its peripheral growth, and a ring of considerable size is produced, alphos annulatus; the ring divides at one or several points, leaving broken segments, and finally these isolated portions gradually disappear. We may therefore trace, in the origin and course of a patch of alphos, a papula, a tubercle, a circular blotch with an elevated and circumscribed border, a ring, the broken fragments of a ring, and, in the end, not unfrequently a melasmic stain.

The TUBERCULA of Willan is open to similar objections to those just made against the order Squamæ. It brings together diseases dissimilar in appearance and pathological nature, and whose only point of correspondence is one of prominence and bulk. The term tuberculum is well applied to those papulæ of larger growth that are met with in syphilis, and constitute the form termed syphiloderma tuberculosum, prominences that, without much elevation, attain a breadth of several lines, and sometimes an inch or more. But this is not the idea intended to be conveyed by Willan; his first genius is phyma, comprehending boils and carbuncle; he next takes those "cuticular excrescences" termed verrucæ; then molluscum; next, a something which he misterms vitiligo (probably lupus non exedens); then acne, sycosis, lupus, elephantiasis, and frambœsia. It is evident from this catalogue that bulk is the prevailing idea; but as the diseases which he has brought together have especial characters of their own, independently of their size, let us endeavor to arrange them according to a better principle.

The signification of the word tubercle, in modern cutaneous nomenclature, is an enlargement of the skin, to a bulk greater than is commonly understood by the term papula, but less than is conveyed by the word tumor. We employ it as an index of size in the instance of erythema tuberculatum; we note the enlargements which occur in the chronic stage of gutta rosacea, as gutta rosacea tuberculosa; then we have an acne tuberculosa, a sycosis tuberculosa, syphiloderma tuberculosum, and an elephantiasis tuberculosa. But in furunculus and anthrax we recognize another quality than mere size, an inflammation attended with prominence, but accompanied with suppuration and gangrene. These properties are peculiar to those diseases, and unite them under the head of "furuncular affections." Verruca is a hypertrophic affection; molluscum and acne are affections of the hair system and sebiparous system; sycosis is an affection of the hair system; lupus is a strumous affection, and elephantiasis a leprous affection. The term vitiligo is employed incorrectly by Willan, and he describes under this name two different diseases; we do not remember to have met with anything corresponding with the first part of his description, namely, "smooth, white, shining tubercles . . . intermixed with shining papulæ," which decline at the end of a week, and become flat in ten days; while the latter part of his narrative bears a close resemblance to the occasional progress of lupus non exedens, consisting of tubercles that are "more permanent, and, as they gradually subside to the level of the surface, they creep along in one direction, as, for example, across the face, or along the limbs, checquering the whole superficies with a veal-skin appearance. All the hairs drop out, where the disease passes, and never sprout again, a smooth shining surface, as if polished, being left, and the morbid whiteness remaining through life." Frambœsia, the yaws, is a tubercular affection occurring among the negroes in Africa and in the West Indies, and not met with amongst ourselves; and, moreover, a disease which appears to be gradually wearing out.

MACULÆ is the designation of Willan's eighth and last order; and in this group he assembles diseases which are marked by their color, and have no place in his other orders. He distinguishes color as proceeding from two different sources; from the deposit of pigment in the skin, as illustrated by ephelis and spilus; and the coloration which results from abnormal vascularity of the skin, as in the instance of nævi vasculosi. With a more advanced school of pathology, we consider the first of these affections as disorders of the chromatogenous function of the skin, and the last we place in our group of vascular affections.

The pathological lesions above indicated, namely, erythema, papulæ, vesiculæ, pustulæ, squamæ, bullæ, tubercula, and maculæ, upon which the eight orders of Willan are founded, and which supply us with terms of the utmost importance to the comprehension of cutaneous diseases, we have designated as *primary* lesions; in order to distinguish them from other lesions, equally necessary to be understood, but of secondary value and frequently the consequence of the preceding, for example, desquamation, discoloration, incrustation, ulceration, cicatrization, &c.

Desquamation of cuticle very commonly follows hyperæmia of the derma, and is present in every instance in which the congestion is sufficient to interrupt the normal function of nutrition and epidermic cell-formation. It is remarkable, in the exanthemata accompanying the zymotic fevers, as occurring over the whole body; in certain situations, as the hands and feet, peeling in extensive laminæ; in the upper parts of the limbs and back, in smaller flakes; and on the front of the trunk of the body, and in the flexures of the joints, being furfuraceous, or even farinaceous. In eczema erythematosum and papulosum, the desquamation is furfuraceous; but this character is most remarkable in eczematous psoriasis, and in pityriasis; in the latter it is, besides, occasionally farinaceous. One of the varieties of eczema is especially distinguished by its desquamating character, namely, eczema squamosum; but desquamation is seen, in its highest degree, in the pityriasis rubra of Hebra.

Discoloration of the skin is a frequent consequence of cutaneous eruptions. Sometimes, the color is red or purple, and presents varying degrees of intensity; at other times, it is brown, of various shades. The red and purple tints are the result of a dilated condition of the capillary plexus; and a more or less retarded circulation through the weakened vessels; the brown marks are produced by the deposit of pigment in the rete mucosum. The red marks are conspicuous after variola; purple discoloration very frequently accompanies gutta rosacea, acne, and furunculus; while brown stains may follow any form of stimulation of the skin, whether proceeding from inflammation or otherwise. We see them occasionally produced by the rays of the sun, by the heat of fire, or by the action of a blister on the skin. They are common on the legs after eczema and lichen; they often take the place of the disks of alphos; and they are remarkable in diseases of cachexia, such as syphiloderma and elephantiasis Græcorum. An universal duskiness of the skin has also been noted, as a consequence of the stimulant action of arsenic; and the deep brown stains of alphos are referable as much to this agent as to the irritation caused by the disease.

Discoloration of the skin also accompanies any operation by which the blood, or the red coloring matter of the blood, finds its way into the tissues. Sometimes, the blood may escape from the vessels, as in purpura; at other times, it may be forced out of the bloodvessels by pressure or contusion. In this way is produced the black, the purple, the greenish, and the yellowish stain of a bruise. Urticaria, or a state of spasm of the muscular structure of the skin, is sometimes followed by a discoloration such as succeeds a bruise; and so also are some of the deeper-seated forms of erythema. In some instances it would almost seem that the red corpuscles of the blood were disintegrated in the capillary vessels, and that the coloring principle was diffused in the tissues in a state of solution. In certain states of constitution, particularly the cachectic, stains resembling bruises are produced by the slightest pressure, as by the mere weight of the body or of a limb, by the simple grasp of the hand, or by the ligature of the ties and supports of the clothing.

cutaneous affections in which there is no destruction of tissue, however severe they may be in other respects; for example, eczema and alphos. But it follows the true pustules, for example, ecthyma; vesico-pustules, for example, variola, and herpes zoster; gangrenous pustules, such as furunculus, anthrax, and pustula maligna; and the ulcerations of struma, syphilis, and elephantiasis.

Cicatrices without ulceration present some interesting pathological phenomena; the simplest is the cicatrix of pregnancy. When the skin is overstretched, as in pregnancy, obesity, and œdema, the corium is apt to give way, and occasion partial fissures of the derma; sometimes, this process is accompanied with erythematous lines indicating congestion of the corresponding portion of the papillary layer; at other times, there is no erythema, and the occurrence is not discovered until the white glossy lines of a cicatrix make their appearance. Sometimes this phenomenon takes place in an abnormal state of the skin; from the pressure of a fold of the derma against an adjoining fold, and may be quite superficial; or it may be deep, and extend through the whole thickness of the derma, and also through the subcutaneous fat.

But the most important of the cicatrices produced without ulceration, are those which are found in association with some forms of tubercular syphilis, lupus non exedens, lupus erythematosus, and elephantiasis. The destruction of tissue in these instances results from interstitial absorption; the papillary layer of the derma is first altered in its nature, reduced from a higher to a lower type of organization; from a highly vitalized vascular structure to a semitransparent cell-tissue, and subsequently removed by absorption, leaving the white fibrous web of the corium exposed to view, and presenting all the appearance and all the characters of a cicatrix, with the exception of not being a secondary formation deposited in the place of a lost structure. In tubercular syphilis we often meet with cicatrized pits where no ulceration has previously existed; the streaked cicatrix-like surface of lupus non exedens and of one form of sycosis has a similar origin; so also have the atrophied blotches of lupus erythematosus; and the leucose patches of morphœa alba atrophica. In some instances, as in lupus non exedens, the interstitial absorption produces a kind of dissection of the layers of the skin; the papillæ are first removed, which brings into view the vascular plexus of the papillary layer; then the sebaceous glands are seen, with their lobulated structure as distinctly exhibited as if the tissues were transparent; and, lastly, the fibrous substratum alone remains.

Taking a general review of the pathological operation of inflammation on the skin, we may conclude, that its effects, are, 1. Simple redness, with or without exfoliation of cuticle, as in erythema and exanthema; 2. redness with effusion of serum beneath the cuticle, constituting bullæ; 3. redness with interstitial infiltration of the colorless part of the blood and effusion of serum beneath the cuticle, as in vesiculæ, and especially in eczema; 4. redness with interstitial infiltration affecting single follicles, as in papulæ, or spreading from a follicle into the surrounding tissues, as in tubercula; 5. redness, with tuberculation and gangrene of cellular tissue, as in furunculus and anthrax; 6. redness with the formation of pus beneath the cuticle, as in pustulæ; 7. redness, with the production of scales of morbid cuticle, as in squamæ; 8. redness, followed by an alteration of pigment, as in some forms of maculæ; and 9. its secondary consequences, namely, exfoliation of cuticle; discoloration, the production and accumulation of crusts; ulceration; and cicatriation. To which it may be proper to add, traumatic affections or injuries inflicted on the skin.

Traumatic affections imply an injury done to the tissues of the skin, by heat or by cold, or by irritation, whether occasioned by insects, or by chemical or mechanical means. Excessive heat may act simply as a stimulus, or it may destroy the vitality of the skin; cold also may weaken and even annihilate the life of the integument, as in pernio or chilblain, and gelato or frostbite. Insects may produce inflammation by simply crawling upon the surface and feeding on the softer layers of the epidermis, as in the case of the acarus scabiei; or they may pierce the papillary layer of the derma in search of food, like the pediculus, the pulex, or the cimex; or they may burrow in the subcutaneous tissues, like the filaria. Finally, inflammation may be excited in the skin by the stimulus of chemical means, as by cantharides, by croton oil, tartarized antimony, strong liquor ammoniæ, or powerful acids; or by mechanical means, as by friction and contusion; the effects of friction being illustrated by erythema intertrigo and of contusion by erythema ab ictu.

Inflammation involves the whole of the tissues of the skin, although its effects may be manifested by its operation on one part of the cutaneous structure more than the rest, for example, the papillary layer, in erythema; the follicular structure, in lichen; the epidermis, in alphos; and the corium, in furunculus. But there are certain affections which are not due to general inflammation, even if they be not entirely independent of inflammatory action, neither do they involve the whole of the tissues of the skin, but are limited to one or other of its parts, as of its nerves and bloodvessels. In the former case, our attention is drawn to the morbid condition, by aberration of function of the nerves, for example, heightened sensibility, deficient sensibility, or altered sensibility; and, in the latter, by aberration of structure, as in the case of nævus, and by the spontaneous escape of the colored elements of the blood from its vessels, as in purpura.

The pathology of the NERVES, constituting *neuroses*, is little understood, in consequence of the difficulties which attend its investigation; and the morbid changes, heretofore observed, are inadequate to explain many of the known phenomena of aberration of function of the cutaneous nervous system. We can appreciate a suspension of function from atrophy of the nervous fibrils, or from thickening of and effusion into the neurilemma and obliteration of the nervous tubule, as happens in elephantiasis; but we have no means of detecting those subtler alterations of the nervous fluid or of its containing sheath, that occasion the various forms and degrees of hyperæsthesia, of neuralgia, and pruritus. In some instances, no doubt, the nerve is the mere agent of transmission of a sense of irritation from a distant part; but in other instances it is equally certain that the morbid condition of the nerve is local. We may often relieve an obstinate prurigo by local remedies; but we should not expect to exert much influence over an urticaria by similar means. As little does the observation of the aberrations of function of the trophic element of the nervous system help us to the comprehension of its pathology; we may possibly seek in vain for those physical changes in the nerve, which give origin to an attack of shingles; we have not yet discovered the morbid changes in the nervous fibril, that contribute to the growth of a strumous tumor or a cancer; and, we have still to investigate those alterations in the organic nerve that determine the destruction of the blood corpuscle, and its conversion into an atom of pigment.

The pathology of the BLOODVESSELS of the skin presents us with the phenomena of increased magnitude of the vessels; and of an alteration of structure of their coats that permits the escape of the red elements of the blood into the surrounding tissue. That which is imperceptible, otherwise than as a pink blush, in a healthy state of the cutaneous tissues, may be developed, under the influence of an aberration of nutrition, into a prominent tumor of considerable size, consisting almost wholly of a plexus of bloodvessels, held together by a small quantity of cellular or connective tissue. The old term, "aneurism by anastomosis," expresses the nature of the morbid affection with considerable clearness; it is a tumor containing blood, not in a single vessel, as in ordinary aneurism, but, in the myriad of anastomosing tubes which compose a capillary vascular plexus; the vascular mass has been compared to the structure of the erectile organs, and was termed by Dupuytren, "erectile tumor;" its more common appellation being, nævus. In nævus the whole structure of the skin is sacrificed to the growth and development of its vascular structure; the papillary layer and corium are in a state of atrophy; the sensibility of the part is lowered; the hairs and glandular organs remain undeveloped; and the cuticle is smooth and attenuated; finally, when the tumor subsides by spontaneous cure, the disorganized skin has the appearance of a cicatrix, or of a wrinkled atrophied mass, composed of loose cellular tissue, covered by epidermis.

Vascular nævus varies in color in proportion to the activity of circulation through its vessels; when the vessels are small and the circulation rapid, the tumor has the red tint of arterial blood; but, if the vessels be larger, and the energy of circulation be thrown upon the venous system, the blood moves more slowly through its tubes, it has time to acquire a purple tint in its course, and the tumor is bluish or purplish in hue. Vascular nævi begin in the capillary plexus of the skin; they are for the most part congenital, and indicate a perversion of nutrition; sometimes they subside after birth and gradually disappear, but at other times they continue to increase. Certain of the smaller kinds of nævus, such as the nævus araneus, may be developed at any period of life, but are most common in children and young persons, in those, in fact, in whom delicacy of skin is likely to prevail; while others, originating in debility of the cutaneous tissues, are most common in advanced age.

A varicose condition of the venules of the skin is not unfrequent in adults and elderly persons, as a consequence of impeded circulation and hypertrophy of those vessels; varicose venules are sometimes met with in the face, especially on the nose, and are also, not unfrequently, seen in the lower limbs. In the latter, they may be associated with varicose veins, but they may also exist independently of a varicose state of the venous system.

Purpura is another affection with which the bloodvessels are intimately if not principally concerned. There is a lax condition of the tissues of the skin, as well as of the bloodvessels, a state in which the blood itself participates, and the red portion of the blood transudes through the vessels into the neighboring tissues; hence the spots which are denominated purpura, and hence also the names which, according to their size, are given to the spots, namely, stigmata, petechiæ, vibices, and ecchymoses. The weak and lax state of the tissues of the body in purpura, is shown by the frequent association of pemphigus with that disease, and also by the occurrence of hemorrhage from the mucous membranes.

Morbid states of the EPIDERMIS are commonly due to an unhealthy condition of the general system, and are usually associated with some degree of inflammation of the skin; such is the case with derangement of formation of the nails, with the development of the phytodermic affections, and of some of the pigmentary affections. The most marked state of disorder of the epidermis known, is one originating in faulty development and nutrition of the skin, namely, xeroderma or ichthyosis, and is unaccompanied by inflammation; and the same may be said of certain forms of melasma, in which the rete mucosum would seem to perform a simple secreting function, while other examples of melasma are preceded by, and sometimes accompanied with, hyperæmia of the skin, as in the case of ephelis.

One of the functions of the epidermis, is the formation of pigment; and the quantity of pigment produced in the rete mucosum is subject to considerable variation. It is governed physiologically by those constitutional states of the body which are termed "temperament;" it is influenced by local stimulation, both normal and abnormal; and it is often accumulated in great excess as a consequence of disease. It is necessary to distinguish between physiological and pathological excess of pigment, the skin of the pudendum acquires a deeper tint at puberty, the eyelids during menstruation, and the areola of the mamma during pregnancy, these are physiological changes; but if the discoloration extend beyond the usual limits, or the depth of the tint be remarkable, the change must be regarded as pathological, and this is especially the case if the seat of the discoloration be abnormal, such as the forehead, the face or neck, or the trunk of the body, or limbs.

Addison observed and pointed out a given relation between melasma and disease of certain abdominal organs, namely, the suprarenal capsules. We have shown a connection between melasma and injury of the organic nervous system, whether such injury result from nervous shock, or deranged function, or disease of the abdominal organs in general, or of the uterine and reproductive organs; and

Frerichs has noted the formation of pigment in actual operation in the veins of the portal system, and especially in the splenic vein, and has demonstrated the production of pigment to be the consequence of destruction of the blood corpuscle. Hence, two prominent symptoms are present together in melasma, namely, excess of pigment, and loss of the red particles of the blood, constituting anæmia; and we are made aware of the fact, that any exhaustion of power of the organic nerves of the abdomen, may be accompanied with destruction of the blood corpuscle and the production of pigmentary matter, and consequent anæmia; whether the cause of exhaustion be simply physiological, as in the case of ordinary menstruation, or pathological, as in painful menstruation, disordered digestion, or organic disease; and, as the cause resides in the organic nervous system and not in the organ, the particular organ, whether a degenerated gland, such as the suprarenal capsule, or the stomach, spleen, liver, or uterus, is unimportant. In melasma, therefore, there will be, conjoined with excess of pigment, loss of nervous power, and loss of the red corpuscles of the blood or anæmia.

We may infer from these observations that the pigment of the skin is a modification of the red element of the blood, and that the normal pigmentation of the skin is due to the presence of a large quantity of blood in the cutaneous capillaries, and the changes which that blood undergoes in the performance of the natural functions of the skin; while, abnormal pigmentation results from the production of an excess of pigment in the bloodvessels of the body, and its elimination by the skin. It is well known, that the erythema caused by the action of the rays of the sun on the skin, often leaves behind it a brown patch, which is termed ephelis; the heat of the fire produces a similar change (ephelis ignealis), as we have occasion to see frequently on the lower limbs; and so also does erythematous congestion, however induced. But these cases are very different from those extreme examples of perversion of coloration, in which an excess of pigment is present on one spot, while upon another, there may be a complete state of achroma or absence of pigment.

It is clear, therefore, that while normal pigmentation is under the governance of and is controlled by the nervous system, abnormal or morbid coloration is equally of neurotic origin; and that every example of morbid coloration is preceded by, or accompanied with, disordered function and exhaustion of the nervous system.

Pigmentary affections present various tints of color; the more common are brown and black in different degrees, constituting melasma or melanoderma; sometimes they are bluish in tint, cyanoderma; sometimes yellowish, as in xanthoderma; and sometimes greenish, as in chloasma. The pigmentary principle is probably alike, or very nearly alike, in all, and is derived from those sources that give color to the blood, the bile, the urine, and the various fluids of the body.

Another function of the epidermis is, the elaboration of a horny material that bestows on the cuticle its special characters of toughness, pliancy, smoothness, and transparency, qualities that are seen in their most exalted form in the nails. The absence of these qualities indicates a pathological state of the epidermis, under which, the cuticle may be brittle, hard, fragile, rough, and opaque. A minor degree of this pathological condition is perceived after every hyperæmic disturbance of the derma, as in erythema, exanthema, eczema, and syphiloderma. It is seen, in a more decided form, in the chronic erythema and eczema that go by the name of pityriasis and psoriasis, and more characteristically in alphos and scabrities unguium; and especially in ichthyosis, and the phytodermata, namely, trichonosis, favus, and chloasma pityriasicum.

In erythema, exanthema, and eczema, there is no departure from the normal structure of the epidermis; the existing cuticle simply exfoliates. In chronic stages of the same disorder the cuticle is produced in small plates corresponding with the lines of motion of the skin; but the cuticular plates or scales of alphos differ in structure from normal cuticle, and exhibit a porous texture that seems to result from the accumulation of crude and imperfectly developed epidermic cells. Another degree of crudity and imperfect development of epidermic cell is seen in xeroderma and ichthyosis; but the most remarkable of all is met with in trichonosis, chloasma and favus. In these latter affections, the component granules of the epidermic cells undergo an independent proliferation, like the organic granules of mucedinous fungi, and have all the appearance of a mass of mucedinous matter: consisting of granules, shafts, and branches.

The morbid changes in the cuticle at present under consideration take place in the growing layer of the epidermis, namely, the rete mucosum; the cells of that structure, arrested in their development, checked in their natural function of ripening into horny scales, are capable, by their accumulation and desiccation, of producing the hard and irregular masses or plates of ichthyosis, the pulverulent exuviation of xeroderma, the laminated and porous scales of alphos, the flocculent desquamation of chloasma, trichonosis, sycosis, and the pale yellow and friable cups of favus. The phytiform character of the latter has suggested the belief that they are not composed of altered cuticular cells, but are an accumulated mass of mycodermic vegetation, originating in sporules or seeds coming from without, piercing the horny cuticle to reach the rete mucosum, feeding on the juices of the rete mucosum, destroying its life and that of the epidermis, and breaking up the structure of the latter, and converting it into exuviæ.

This theory, which we believe to be incorrect, has of late years met with such ready acceptance, that, as historians of the progress of cutaneous medicine, we are under the necessity of mentioning it. It starts with an assumption which is physically impossible, namely, that of a sporule or seed penetrating the thick horny stratum of the cuticle before it can reach the seat of its food and means of growth, and it presumes upon a morbid state of the juices of the body favorable to its development and growth; while it overlooks the fact, that myriads of wombs of these granules normally compose the rete mucosum, namely, the nascent and growing cells, subsequently to become horny plates; and, that a simple aberration of nutrition of these organic granules, may rob them of their destined power, and prostrate them to a lower function, common to the lowest forms of organic matter, whether animal or vegetable, namely, that of proliferous development and growth. Nevertheless, these mucedinales are associated with the names of distinguished physiologists, and have received considerable attention both in England and abroad.

The pathology of the HAIR involves the consideration of its formative energy, the consequences of aberration of that energy being an alteration in the quantity, length, color, or texture of the hair. The hair may be excessive in quantity, on the head or on other regions of the body, *hirsuties;* it may be longer or shorter than the normal standard; and, in certain states of health of the individual, it may remain permanently short. The hair may be scanty, *alopecia*, from deficient constitutional and local power; and it is remarkable that this condition frequently succeeds a state of superabundance of hair; or, the trichogenous function of the skin may be totally suspended, on parts or on the whole of the body. In the latter case, the absence of hair may occur in spots of limited size, sometimes circular, as in alopecia area; sometimes oblong and serpentine in figure, alopecia opiasis; or it may include the entire scalp, and, indeed, the whole body, alopecia calva vel calvities.

The color of the hair, light in the infant, becomes darker in tint with the advance of age; and, when the vital powers of the skin are weakened by age or exhausted by acquired feebleness or disease, the chromatogenous function may be suspended, and the hair become white, *canities*. Sometimes the whitened hair has the qualities of horn, it is harsh, stiff, and straight; at other times the color seems due, not to a corneous transformation, but to the substitution of a white calcareous material for the natural pigment. When hair returns upon a part which has been bald for a while, it follows the normal development of infantile hair; it is at first fine and pale; the fine hair is shed, and is succeeded by a thicker and stronger growth; but bulk and color return only by degrees. And, when the powers of the skin are exhausted, as in leucosma and leuce, the subsequently produced hair remains permanently white.

An illustration of the pathology of the hair is very commonly seen after fevers, syphilis, puerperal confinement, and chronic inflammation of the scalp of whatever kind. In these cases the nutrition of the skin is suspended, the adhesion of the hair to the derma is consequently weakened, and the hair falls more or less extensively. The hair, however, is renewed as soon as the skin re-acquires its tone; and more speedily and completely in proportion to the degree of restoration. Sometimes the new hair is as vigorous as the old; sometimes, however, it remains weak and feeble for the rest of life, this is alopecia vulgaris, and is due to general debility of the skin; but the absolute exhaustion of the hair formative power which is seen in area, ophiasis, and calvities juvenalis, is neurotic, and is accompanied with loss of innervation and normal sensibility of the skin.

We have before discussed the physiological function of the epidermis; namely, to develop horny plates out of moist granular albuminous cells, and we have shown the existence of a point upon the scale of progressive development which may be taken as the standard of perfection, that, at this point, the horny tissue is complete in all its properties; but that short of this point, or in excess beyond it, the normal structure is impaired. The same principle is applicable to the hair; the function of the hair papilla is to produce cells which are soft and moist and granular; and subsequent development converts these cells into elongated fibres for the construction of an organ, the hair, which possesses some remarkable qualities; it is firm, flexible, tough, smooth, transparent, and uniform in size; it is not horn, although resembling horn in some of its characters; and it is widely different from epidermis both in its origin and attributes.

As a departure from the physiological standard brings the organ into the category of a pathological state; an aberration of development may reverse the normal qualities of the hair, and make it soft, rigid, brittle, rough, opaque, and uneven. Brittleness of the hair, *fragilitis crinium*, is a not unfrequent accompaniment of pathological alteration of texture; sometimes it is indicated merely by dryness of the hair, and a snapping through of the entire shaft, or a splitting of the ends; and, sometimes, especially in the thick hairs of the whiskers and beard, there is a partial break of the shaft, with a separation of the fibres at the point of fracture, which shows as a white speck upon the hair, and gives a speckled character to the mass. There are often three, four, or many of these bruised rings on the shaft of the hair; and they resemble a white dust or scurf, dispersed in the beard. Sometimes the hair, in a pathological condition, resembles *tow;* sometime it is harsh and wiry; sometimes it is rigid and tough like horn; sometimes discolored and apparently dead; and sometimes twisted and bent.

But the most important pathological alteration of the hair is that which, with good reason, is termed *trichonosis.* The hair in trichonosis is evidently disorganized, it is dry, brittle, shrivelled, flattened, collapsed, bent, and bleached, every normal character is gone, and were it not found upon the head it could hardly be recognized as hair. If we follow it into its follicle, we find its cylinder to be larger than natural; it is tumefied, infiltrated with fluid, pale and soft; we perceive that its shrivelled appearance externally to the follicle is due to desiccation of the fluids with which its cells are charged; and we are led to the conclusion that the organ is imperfectly formed; that its cells are in the same crude state in which they were produced by the hair-papilla; that they are unhealthy and bloated in their origin; and that the subsequently corneous, or rather crineous, development has been wholly suspended. This we believe to be the true pathology of trichonosis or ringworm, the tinea tonsurans of Authors; and we also think it probable that it may be the correct pathology of plica polonica.

Many years ago, we pointed out the fact, that the newly-formed epidermal cells, and also the hair-cells, were composed of granules of organic matter arranged in a special manner. These granules are the agents of the normal function of the cells; their ascensive action is to produce horn and crineous tissue. If they remain stationary, they

to a lower function, escend in the animal
whether animal or r may assume a germi-
ment and growth. e resembling a muce-
with the names of formed cells in tricho-
siderable attention nules; it is these large
The pathology ned within and between
tive energy, the the morbid hair; and,
alteration in the rude albuminous charac-
hair may be ex the atmosphere, that are
the body, *hirsu* brittleness of the hair. In
standard; and, s would be converted into
remain perma eir qualities; and, although
deficient cons care and close observation
this condition ced in bulk, and altered in
or, the trich fficulty; but in the morbid
on parts or lar figure and gross dimen-
of hair ma e constituent of the shaft of the
alopecia to have assumed a plant-like
opiasis: er and the mutual apposition of
body, al tion and growth of the granule
The heory regards these granules as
with th nt; and the cylindrical shafts as
weak rules are believed to come from
chrom ir-follicles, to creep inwards to the
whit way into the bulb of the hair, and
it is The plant is called *trichophyton*;
to a found in trichonosis tonsurans, in
re
wh AR SYSTEM of the skin comprehends
ir ting apparatus, together with inflam-
s the glands themselves. The secre-
and the perspiratory fluid, and these
antity and quality. Inflammation of
skin is seen in acne, sycosis, and in
the structural changes of the glands
of the aperture of the follicle, morbid
ing, or morbid changes in the proper

sebaceous matter is termed *stearrhœa* or
more fluid and oleaginous than usual, flows
ives to the latter a greasy appearance. It
the face and scalp, and is sometimes remark-
the scalp, the sebaceous matter often con-
lesome. An absence of sebaceous secretion,
and parched state of the skin, and is present
osis; while a state of altered composition of
stolodes, is sometimes remarkable for an ab-
of the substance; it is sometimes yellow, stear-
times colored by a blue pigment, stearrhœa
s brown or black, stearrhœa nigricans. And

an accumulation of a grayish sebaceous substance in the form of polygonal crusts or scales like those of a lizard, or elongated spines, on the morbid skin of xeroderma, gives rise to the affection which we have termed ichthyosis saurioides, or simply sauriosis.

In an altered state of physical or chemical composition, the sebaceous secretion sometimes remains impacted in the excretory ducts of the sebaceous glands and in the hair-follicles, constituting *comedones* and sebaceous tumors; and, sometimes, the glands themselves are distended with this secretion and rise above the level of the surface, forming small currant-shaped tubercles or tumors, to which the term *molluscum contagiosum* has been inaptly applied. With accumulation of sebaceous matter in the follicular or excretory portion of the gland, there is also thickening of the walls of the duct; and in advanced stages of the hypertrophic process, the coats of the follicle grow into importance, and become the cyst of the accumulation, while the tumor in this state, is termed an *encysted tumor*. An encysted tumor may be either open or closed, the closure of the aperture of the follicle very commonly taking place from the growth of the cyst and the pressure of its contents. Sometimes, doubtless, an encysted tumor originates in closure of the aperture of the follicle; and, in another form of sebaceous tubercle, namely, in the miliary or pearly tubercle, we have the example of an aborted follicle, which has never possessed an external aperture; which, as far as the cyst is concerned, is an arrest of development of the sebiparous gland.

The contents of the sebaceous tumors with open apertures are simply a normal sebaceous substance, composed of epithelial cells and scales, entire and disintegrated, and commingled with short hairs and with a greater or less quantity of water and oil; but, in the closed encysted tumors, the contents undergo various changes, the result of confinement, and sometimes of inflammation of the cyst and surrounding integuments, induced by pressure or injury. Very commonly, the epithelial cells nearest the cyst are condensed into a horny capsule, while the central mass is sometimes laminated, sometimes disintegrated and broken up into an atheromatus or pap-like substance, sometimes steatomatous and apparently composed of fat; sometimes melicerous, like a semifluid wax; and sometimes wholly fluid; the softened matter being often mingled with hairs and crystals of stearine, and often extremely fetid.

When these accumulations of sebaceous matter are exposed to the desiccating effects of the air, they become hardened into a kind of horn, and the gradual extrusion of this substance through the normal opening of the cyst, or through an accidental opening resulting from ulceration, is the ordinary method of formation of the so-called *human horns*, corneous masses, sometimes several inches in length, and often an inch or more in diameter.

Encysted tumors containing fluid only, are sometimes met with along the edges of the eyelids; one of these, a *serous cyst*, attains the dimensions of a grape, while a smaller kind, from its hardness and transparency, has been termed *grando* and *chalazion*. In a few instances, we have seen these cysts on other parts of the skin, not epider-

retain
scale t
natin
dinon
nosis
cells
them.
it is
ter,
the
nor
fibre
their
in t
app
hair
sion
org
for
a n
in
sp
the
the
fu
th
an
sy

al
m
ti
p
t
k

in the substance of the
sion of sebaceous follicles

of the sebiferous follicles
the inflammation of the
and terminates in suppuration,
or inspissated sebaceous
large sebiparous glands of the
; and is remarkable for its
the *flos ætatis*, or blossom of life,
inflammation of the hair-
much swelling, with extreme
patency of the follicles; the
in excessive quantity, a muco-
of the inflammation, the spot re-
or livid color, and scalled or devoid
some analogy to acne, is a disease of
sebaceous follicles.
of the skin are shown in the occa-
of the excretory ducts, whether such
the inflammatory process, or of im-
and atrophy of the glandular
epidermic and epithelial portion of the
and lastly, in the degeneration of the
malignant.
examples of occlusion of the excretory
the encysted tumors, and we have
resulting from arrest of develop-
instance of the miliary tubercle. The
and form prominences on the
and sometimes all trace of them in
be lost. The epidermic funnel which
is sometimes abnormally enlarged,
vascular papules, *papulæ epidermicæ;*
lining of the follicles is increased in

and *laminæ flavæ epithelii cutis,* we have
of the tissues surrounding the mouth
epithelial lining of the duct is seemingly
vessels straggling in the midst of the
the vascular coats of the duct are also im-
yellow matter is lobulated and soft, it
papulæ dispersed over the body and
met with in the skin of the eyelids. In
which, after a time, unite by their
various size, sometimes extending along the
and sometimes along both, and meeting at
papulæ and laminæ flavæ vary in their color,
golden yellow, and are harmless in their

A more grave alteration of the coats of the sebaceous glands and ducts is the cellular degeneration of tissues, which gives rise to *epithelioma* or cancer. This change begins near the aperture of the follicle, and gradually spreads inwards to the gland and outwards into the immediately surrounding cutaneous tissue. It forms small tubercular masses, which are hard and semitransparent, and traversed by minute bloodvessels. At a later period, the morbid tissue softens and ulcerates, and troublesome sores are produced.

The epithelial lining of the follicles is subject to a remarkable morbid change, which we have already described as a phytiform or granular degeneration of its component cells. It is this transformation that produces trichonosis tonsurans or tinea capitis, tinea corporis, and favus; and a similar alteration in the epithelial cells has been observed in sycosis.

The pathology of the SUDORIPAROUS SYSTEM is comprised in the consideration of the defective development and atrophy of the glands; and, their errors of secretion, for example, deficiency of secretion, or anidrosis; excess of secretion, idrosis or ephidrosis; alteration of secretion affecting its odor, osmidrosis; or its color, chromidrosis and hæmidrosis. In chromidrosis the prevailing tints of color are, black, blue, green, and yellow; while in hæmidrosis, the red tint is derived from the pigment of the blood.

Our arrangement of the subjects comprised in the pathology of the skin is based upon a threefold division, namely, diseases affecting the whole of the tissues; diseases affecting parts of the tissues; and errors of development, nutrition, and growth. The first two of these heads we have already sufficiently considered, and we now pass on to that which remains, and which we may further divide into four groups, namely, defective development, defective nutrition, excessive nutrition and perverted nutrition. Cases are on record in which infants have been born with a skin so imperfect on parts of the body, more or less extensive, as to resemble a cicatrix rather than the true skin; both the papillary layer and the reticular layer are absent, and all that presents itself is, a thin layer of connective tissue, covered by a smooth and laminated epidermis. Such an imperfect state of the skin is met with inclosing the sac of spina bifida; and, one of our patients, at present under treatment for eczema, exhibits a large patch on the side of the chin, on which the true skin is absent, and its place occupied by a thin layer of connective tissue, covered with a smooth epithelial layer. To our question, as to the origin of this scar-like patch, the gentleman replied, that it was congenital, and the mark of an oyster, and that it shed its scales regularly in the oyster season. The congenital defect may involve all the tissues of the skin, or it may be limited separately to the papillary layer, to the reticular layer, or to the glands. Cases occasionally occur in which there is an evident absence of the glands of the skin, associated with a weak and imperfectly developed dermal tissue; and a congenital deficiency of the hair may be attributed to a similar agency.

Defective nutrition of the skin is manifested by a weakly and delicate construction of the organ, and by an appearance resembling that of an infant; at other times it is shown in a thin, hard, and dry tegument, or xeroderma, covered by a morbid cuticle in a perpetual state of exuviation, ichthyosis vera; while another form of defective nutrition is exhibited in atrophia cutis. Atrophy of the skin sometimes assumes the characters of a contraction of the tissue, so that it becomes too small for the body which it contains; the lower eyelids are drawn down, the skin is stretched over the malar bones, the lower lip is pulled towards the chin; the joints are flexed, and an ulcerative action is set up at the tips of the fingers and over the projections of the joints. Atrophia cutis is also met with in elephantiasis, in morphœa alba, in tubercular syphilis, in sycosis, in lupus non exedens, and in lupus erythematosus.

Excessive nutrition of the skin is evinced by abnormal growth of the organ, either as a whole, or of parts of its structure; and the hypertrophic action may involve the entire skin, as in nævus hypertrophicus, verruca acrochordon, and tegumentary molluscum; or it may involve, with the integument, the subcutaneous connective tissue, as in boucnemia tropica, the Barbadoes leg. A state not very dissimilar to this we meet with in old standing congestions of the skin and of the legs, and especially in association with chronic ulcers, in which, not only the fibrous tissue of the skin is augmented in quantity and bulk, but also the papillæ cutis are enlarged; or the hypertrophy may be one, of the papillæ of the skin, as in the various forms of verruca vulgaris. Hypertrophy of the fibrous tissue of the skin is illustrated independently in kelis, both vera and spuria; and hypertrophia epidermidis is seen in tylosis, pachylosis, and clavus.

Perverted nutrition of the skin gives rise to alterations in its color, texture, and general appearance, a state of real cacotrophia cutis. It is not uncommon, in a cachectic state of the constitution, to find the skin of youthful persons more nearly resembling leather or parchment than living skin. In advanced age this state pervades the entire integument; while, even in the adult, a similar condition is sometimes met with. We have often examined the skin of the trunk on which growths of various kinds, molluscous, verrucous, and vascular, were to be seen, and on which gray and brown concretions had been deposited. Cacotrophia cutis often shows itself on the face of elderly persons, in the form of concretions of epithelial matter, partly follicular and partly epidermic; these concretions are closely adherent to the skin, and their removal frequently leaves an excoriated surface, from which a few drops of blood escape. Close inspection shows that the papillary layer of the skin is in a state of partial atrophy; frequently the sebiparous glands are exposed to view, and a gradual degeneration of structure is taking place.

Sclerosis of the skin, or scleroderma, is another form of cacotrophia cutis; the skin has sometimes the density of horn or cartilage, and contracts upon the subcutaneous tissues, or around the limb like a plate of metal. A case of this kind affecting the leg, in a lady of middle age, is at present before us; the hardened skin clasps the limb a little above the ankle. This portion of the limb is reduced in dimensions by the pressure, while the foot is swollen and somewhat œdematous. Sometimes the sclerosis invades the subcutaneous cellular tissue, as in the induration of skin met with in newly-born infants, and also in boucnemia tropica. In a case at present under our treatment, the induration affects the face, the neck, the shoulders, and the upper part of the trunk. It began, a few weeks since, as an imperfectly developed erythema. The skin is hard to the touch, reminding us of ivory or marble; there is no redness or change of appearance on the surface; but it is thicker than usual, and impedes the free movement of the jaw and of the neck.

Under the head of cacotrophia cutis we may also consider those examples of metamorphosis of tissue which are frequently associated with the tertiary forms of syphilis, with lupus non exedens, lupus erythematosus, morphœa, and elephantiasis; as, also, epithelioma, and carcinoma cutis. In syphiloderma, lupus non exedens, and morphœa lardacea, the altered and degenerate tissue is removed by absorption without lesion of continuity; in elephantiasis a similar action takes place, but more frequently the skin is so much disorganized that it falls into ulceration; while in epithelioma and carcinoma, ulceration is the common sequel. The morbid tissue of morphœa alba lardacea is probably amyloid in its nature.

CHAPTER III.

CLASSIFICATION OF DISEASES OF THE SKIN.

THE ancient records of medicine afford ample evidence of the early attention given by medical philosophers to cutaneous diseases. The external position of these diseases, and the admiration of the ancients for manly beauty, no doubt contributed to this attention; and, we have had handed down to us, and make use of, at the present day, terms that were employed by Æsculapius, by the Asclepiadæ, and by Hippocrates and his successors. The growth of these diseases on the skin very naturally suggested a comparison with the parasitic growth found on the bark of trees, and the adoption of the term *lichen*[1] and lichenes; while their spreading character is distinguished by the term *herpes*. The habit of breaking forth over the whole surface, like a plant bursting into blossom, suggested the term *exanthema*; their roughness and scaly quality is expressed by the word *lepra*; their itchiness by *psora*; and their proneness to vesication by *phlyctenæ*. Their color contributed the terms *alphos*, *leuce*, *melas*, *erythema*; their occurrence at a certain period of life, *acme*; and, their general eruptive quality, the term *eczema*. The word eczema occurs for the first time in the writings of Ætius; but this term, like the rest, was probably in common use among the people from whom the whole of the terms apparently took their origin.

---

[1] *Vide* Glossary at the end of the volume.

If, therefore, we assemble these terms in a group, we arrive at the conclusion that a very practical diagnostic classification of cutaneous diseases existed among the ancients from the earliest times. For example:—

Lichen,
Herpes,
Lepra,
Psora,
Phlyctenæ,
Exanthemata,
Alphos,
Leuce,
Melas,
Acme,
Eczema.

Lichen, or lichenes, is a general expression for "an eruption," and more recently became associated with the synonymous expression, eczema; herpes would be used to distinguish the spreading forms of eruption generally; lepra, the squamous eruptions; psora, the itchy eruptions; phlyctenæ, the vesicular and bullous eruptions; exanthemata, the general efflorescences; erythemata, hyperæmic blotches of all kinds; and alphos, leuce, and melas, the so-called discolorations.

In the minds of the Greeks, these terms were evidently generic expressions, but, in their descent to ourselves, they have undergone considerable modification of meaning, and have at present a specific signification often totally different from that originally intended. Since the days of Willan, lichen, no longer used in the plural, is an eruption of pimples, and herpes is one of large vesicles. Willan was faithful to the ancient signification of lepra, namely, squamous; but at present, we restrict that term to a disease which is not squamous, namely, the elephantiasis of the Greeks. Psora, which so admirably represented the pruriginous affections, which corresponds with the eczema of our own times, and so long retained a place as a synonym of scabies, is at present almost disused; the term being only revived in its derivative psoriasis, the psora leprodes of earlier writers. Phlyctenæ we occasionally employ as a term significative of large vesicles, as in the instance of herpes phlyctenodes. Exanthemata is now confined to the eruptive fevers; and erythema to simple hyperæmia of the skin. Alphos we have endeavored to retain in the sense in which that term is used by Celsus; not as an achromatous affection, but as a representative of the lepra of Willan. Leuce and melas are dyschromatous disorders, both associated with the elephantine lepra, and, at the same time, the type of existing forms of achroma and dyschroma.

The leading characters of distinction of cutaneous diseases recognized by the ancients would seem, therefore, to have been their well-known qualities of itching, spreading, desquamating, vesicating, general efflorescence, and discoloration. We may arrange them as follows:—

Psoric.
Herpetic.
Squamous.
Vesiculous.
Exanthematous.
Maculous.

Now, these are among the chief of the characters which have engaged the attention of dermatologists in the classification of these diseases.

from the earliest to the present times. Sometimes, their classification has been framed on the signs and symptoms of the disorder, sometimes on the cause, and sometimes on the supposed nature of the disease, as inferred from its relations and phenomena. The signs and symptoms of disease are for the most part conspicuous to the eye, and are, therefore, least liable to occasion error. The cause and the nature of a disease are subject to the interpretation of the mind, and can be deduced only from long and varied observation and experience; the first, is the foundation of a classification suitable to the infancy of science, or to assist the early days of study; the second is the consequence of the first, and is especially adapted to the management and treatment of disease. The first has its type in the classification of Willan, which has been compared with the classification of the vegetable kingdom by Linnæus; the last, in the classification of Alibert, which, in comparison with the botanical arrangement of Jussieu, has been termed the "natural" classification. There is still a third classification; one which takes its inspiration from general pathology, and is purely scientific in its plan, not arising especially out of the consideration of the skin, like the preceding, but a framework of the general pathology of the body applied to the special organ, the skin; this latter is the classification of Hebra.

A moment's reflection will make apparent to the reader, that no classification can be framed upon a large group of diseases that shall be complete in every particular; and, therefore, in the construction or adoption of a classification, it becomes necessary to bring before the mind the precise object which we have in view in employing it. The student seeks to acquire a knowledge of individual diseases; and, therefore, to him the visible signs and appearances of the disease are the most important study; but, having mastered this his first lesson, and having attained the knowledge which enables him to deal with these diseases as a whole, and, with the aim of treating them medically, he is led to seek for other combinations, and to create a classification which is founded on the nature and affinities and cause of a given disease, or of a group of diseases. The Willanean classification may teach him to distinguish between a roseola, a lichen, an eczema, a pemphigus, and an acne; but he must look to a different arrangement to enable him to acquire the diagnosis of an eruptive fever, a syphiloderma, or a scrofuloderma; and, in the treatment of these latter affections, every consideration of classification must be merged in the obligation of treating successfully a blood-poison or a diathesis. We have, therefore, come to the conclusion, that not one classification, but several are necessary to the understanding and management of cutaneous complaints, and that the attainment of a single classification that shall fulfil the double object of learning and treating, is a speculation that is alike unnecessary and impossible.

It was common in the early days of medicine to divide diseases of the skin into: affections of the body, and affections of the nobler part of the body, the head; and, so recently as the beginning of the eighteenth century, our countryman Daniel Turner followed a similar *topographical* classification. He arranges them in two groups, diseases of the general surface, and diseases of parts of the surface; under the former head he includes, lepra Arabum; lepra Græcorum; knesmos or pruritus; the eruptions of children, embracing psydracia, phlyctenæ, and sudamina; herpes; erysipelas; variola, rubeola, and spotted fevers; carbuncle, cancer, and lupus; furunculus, epinyctis and terminthus; diseases of perspiration; diseases of pigment; and marks, and nævi materni; while, under the title of local affections, he treats of diseases of the hair; scall-head and porrigo; phtheiriasis; diseases of the face; of the hands and feet; of the prepuce; of the anus, including hæmorrhoids; of imperforate passages; hurts; burns; bites of venomous creatures; and hurts from venomous insects, and envenomed instruments.[1]

CELSUS, who records the state of knowledge of medicine at the period immediately preceding the Christian era, and describes between forty and fifty cutaneous diseases, foreshadows a *therapeutical* classification; he arranges these diseases in the first place, *remedially*, according to their amenability to hygiene and diet, to drugs, or to surgical manipulation; and secondly, *topographically*, according to position, whether general, partial, or topical; and groups them under four heads, namely: 1. Diseases general in their nature, to be treated by diet; 2. Diseases which may occur on any and every part of the body, to be treated by medicines; 3. Diseases limited to a part, to be treated by medicines; and, 4. Diseases to be treated by surgical means. In the first group, elephantiasis Græcorum stands alone. The second group includes the large majority of cutaneous diseases, and his mode of arrangement, is to take the largest, the most prominent, and, to the eye, the most important, first, for example, carbuncle, and gradually descend from decided prominence to mere asperity; in the latter instance, placing asperity with inflammation as represented by exanthema and scabies (eczema), before asperity without inflammation, as in alphos; and following these with smoothness, as in the case of leuce. The third group is devoted to affections of the hairy scalp, the eyelids, and the face; and the fourth to encysted tumors. The diseases occurring on any and every part of the body, and amenable to treatment by medicines, are: erysipelas from wounds; bites and stings of animals; carbuncles; therioma, a syphilitic or strumous ulcer; ignis sacer, also, probably, a syphilitic or strumous ulcer; pernio; struma; furunculus; phyma; phygethlon, a cutaneous abscess; kerion; acrochordon; thymion, a kind of wart; myrmecia, also a wart; clavus; pustulæ; exanthemata; phlyctenæ; phlyzacion; epinyctis; scabies; impetigo; papulæ; vitiligo; alphos; melas; and leuce. The affections of the hairy scalp, and face, are: defluvium capillorum; calvities; porrigo; sycosis; area; alopecia; ophiasis; varus; lenticula; semeion; ephelis; and phtheiriasis. Of the diseases to be treated by surgical means, the examples are, the encysted tumors of the scalp, which he terms, ganglion; meliceris and atheroma.[2]

---

[1] De Morbis Cutaneis; a treatise of diseases incident to the skin. By Daniel Turner, M. D. Fourth edition, 1731.

[2] See our Essay on the Dermopathology of Celsus; read at the meeting of the British Medical Association, 1863; and published in the British Medical Journal.

Another classification, and one which, more than any besides, has stood the test of time and of opinion, is founded on the visual appearance of the morbid skin, and takes, as its groundwork, the physical signs of the disease appreciable to the eye; in other words, the pathological signs or lesions. Riolanus, a French author of the sixteenth century, informs us, that some physicians, among whom was his distinguished contemporary, Mercurialis,[1] include all diseases of the skin under three heads; namely, alterations of *smoothness*, of *color*, and of *magnitude;* but that, as by this arrangement, no place is given to disorders of the hair, he prefers to arrange them into *pustules*, *deformities*, and *tubercles;* pustules comprehending all eruptions attended with roughness of the skin, whether pimples, vesicles, pustules or scales; deformities, marks of all kinds, morbid colorations, and diseases of the hair; and tubercles, warts, corns, and condylomata.[2] In this simple arrangement, we have the foundation of the classification of Plenck; and, subsequently, that of Willan. Plenck divided diseases of the skin into fourteen classes, and the latter into one hundred and fifteen genera; his fourteen classes being as follows:—

Plenck's Classification (1776).[3]

Maculæ.
Pustulæ.
Vesiculæ.
Bullæ.
Papulæ.
Crustæ.
Squamæ.
Callositates.
Excrescentiæ cutaneæ.
Ulcera cutanea.
Vulnera cutanea.
Insecta cutanea.
Morbi unguium.
Morbi pilorum.

Twenty years later, Willan published the classification which goes by his name. He adopts, as Orders of his class of cutaneous diseases, six of the classes of Plenck; namely, maculæ, pustulæ, vesiculæ, bullæ, papulæ, and squamæ; combines callositates and excrescentiæ cutaneæ under the head of tubercula; adds to these a new order, exanthemata, and omits altogether, crustæ, ulcera cutanea, vulnera cutanea, insecta cutanea, morbi unguium, and morbi pilorum. His eight orders are as follows:—

Willan's Classification (1798).

1. Papulæ.
2. Squamæ.
3. Exanthemata.
4. Bullæ.
5. Pustulæ.
6. Vesiculæ.
7. Tubercula.
8. Maculæ.

It must not, however, be supposed that the classification of Willan was a mere adoption of certain of the classes of Plenck; in the hands of Willan these orders had acquired a new and deeper signification; and, it is to Willan, that we owe the exact definitions of the terms of cutaneous pathology which we use at the present day, and which must continue to be used as long as cutaneous medicine is made a subject of study. The definition of the papulæ, squamæ, exanthematæ, bullæ, pustulæ, vesiculæ, tubercula, and maculæ, is precise, and identified with the language of cutaneous medicine; whatever differences may exist among authors with regard to the classification which, to them, seems the best for the illustration and development of the subject. A PAPULA, says Willan, "is a very small and acuminated elevation" of the skin, "with an inflamed base, very seldom containing a fluid, or suppurating, and commonly terminating in scurf." SQUAMA "is a lamina of morbid cuticle, hard, thickened, whitish and opaque. Scales, when they increase into irregular layers are denominated crusts." EXANTHEMATA are "superficial red patches, variously figured, and diffused irregularly over the body, leaving interstices of a natural color, and terminating in cuticular exfoliations." BULLA is "a large portion of the cuticle detached from the skin by the interposition of a transparent watery fluid." PUSTULA is "an elevation of the cuticle with an inflamed base, containing *pus*." VESICULA is "a small orbicular elevation of the cuticle, containing lymph, which is sometimes clear and colorless, but often opaque, and whitish or pearl-colored. It is succeeded by scurf, or by a laminated scab." TUBERCULUM is "a small, hard, superficial tumor, circumscribed and permanent, or suppurating partially." MACULA is "a permanent discoloration of some portion of the skin, often with a change of its texture." These definitions have remained fixed since they were first given forth by their author, and have become a necessary and unchangeable part of the language of dermopathology. Their value is further enhanced when we turn to the pages of Plenck and note the manner in which the same terms were employed by him. The class of papulæ of the latter author, includes among other diseases, acne, tuberculum, phygethlon, lepra Græcorum, and lepra Arabum. In his group of squamæ, we find, furfuratio, porrigo, lichen, impetigo, and ichthyosis. Among bullæ, occurs phyma or abscess; pustulæ includes, besides elevations of the cuticle containing pus, scabies, variolæ, varicellæ, and terminthus, a kind of boil. Vesiculæ, in addition to sudamen, and miliare, has uritis or the blisters following a burn; tubercula, represented by excrescentiæ cutaneæ, is composed of, verruca, cornua, condyloma, and frambœsia; and maculæ, of six genera, viz., fuscæ, rubræ, lividæ, nigræ, albæ, and incerti coloris; maculæ rubræ, containing gutta rosacea, stigma, erythema, morbilli, scarlatina, urticaria, maculæ venereæ, esseræ, psydraciæ, rubedo cutis, zona, and macula lata Plateri seu ignis sacer.

---

[1] De Morbis Cutaneis, et de omnibus corporis humani excrementis; access. de decoratione. 4to. 1585. Natus 1530; obiit. 1606.

[2] Joannis Riolani, ambiani, medici Parisiensis viri clarissimi opera omnia. 1610. Natus 1539; obiit. ætatis 66, anno salutis 1605.

[3] Josephi Jacobi Plenck; doctrina de morbis cutaneis, qua, hi morbi in suas classes, genera et species rediguntur. Editio secunda aucta, 1783.

The above comparison between the classification of Plenck, and the more precise and better defined signification of the terms employed by Willan, is sufficient to explain the popularity of the classification of the latter, and its adoption by a distinguished line of successors, among whom may be enumerated most of the dermatologists of France. It is to be regretted that Willan did not carry his classification a little further, so as to embrace, not only the skin proper, to which his definitions are restricted, but also the hair system, the glandular system, and the epidermal system; and his scheme would have been more complete had he besides, noted the varieties of disease which, in their several stages, present a multiple elementary form. Among the earliest of the French dermopathologists who adopted the classification of Willan, are Biett, Cazenave, Schedel, Rayer, and Gibert. The last named author calls his book a practical treatise on the *special* diseases of the skin, and limits his field of research, as did Willan and Bateman, to the diseases of the skin proper, making no effort to extend the list of the eight orders of Willan. Biett, who stands first among the followers of Willan in France, altered for the better, the arrangement of the eight orders of Willan, and at the same time, thought it desirable to add to their number, as follows:—

BIETT'S CLASSIFICATION (1828).

1. Exanthemata.
2. Vesiculæ.
3. Bullæ.
4. Pustulæ.
5. Papulæ.
6. Squamæ.
7. Tubercula.
8. Maculæ.
9. Lupus.
10. Pellagra.
11. Syphilides.
12. Purpura.
13. Elephantiasis Arabum.
14. Diseases of the sebaceous follicles.
15. Keloide.

It must be admitted that the order of arrangement of the eight groups of Willan, adopted by Biett, is superior to that of their author, inasmuch as it corresponds more closely with the successive development of the morbid phenomena as they appear in the skin; hyperæmia, represented by exanthemata, commonly precedes exudation, as instanced by vesiculæ, bullæ, and pustulæ; while papulæ, squamæ, and tubercula, are unaccompanied with exterior exudation. His further additions are also important, as illustrative of struma; syphilis: hæmorrhagic dyscrasis; kelis; diseases of the sebaceous system; and the exotic affections, pellagra, and elephantiasis Arabum or boucnemia. But he omits, as did Willan, diseases of the hair, a subject notably indicated by Riolanus and Plenck.

Another eminent physician of the French school, Rayer,[1] enlarges still further the system of Willan, and availing himself of the more advanced progress of anatomy and physiology of his day, takes into his classification that division of the whole subject which we have already pointed out as an omission on the part of the English author. Rayer established three primary divisions, namely, diseases of the skin proper; diseases of the dependencies of the skin, comprising the sebaceous system, hair system, and nails; and diseases resulting from the presence of foreign bodies on the surface, under, or in the substance of the skin; the latter having reference to parasitic animals. Diseases of the skin proper he divides into the six following heads:—

---

[1] Rayer published the first edition of his work in 1828, the second in 1835.

Rayer's Classification (1835).

1. Inflammatory affections.
2. Non-inflammatory affections.
3. Diseases of the secreting functions.
4. Neuroses.
5. Faulty structure; or unusual state of one or other of the elementary components of the skin.
6. Degenerations.

His first division, inflammatory affection, he subdivides into two groups, under the heads of, diseases presenting a *single* elementary form, and diseases presenting *several* elementary forms. As examples of the first of these groups, he includes all the orders of Willan with the exception of maculæ, and adds two additional groups, furunculi and gangrenæ. His arrangement is as follows:—

Exanthemata,
Bullæ,
Vesiculæ,
Pustulæ,
Furunculi,
Gangrenæ,
Papulæ,
Squamæ,
Tubercula.

The diseases presenting several elementary forms, are:—

Syphilis, Ambustio, Pernio.

The elementary forms which he signifies by this arrangement, are, as respects syphilis, exanthematica, bullosa, vesiculosa, pustulosa, squamosa, papulosa, tuberculosa, and vegetativa; and as respects ambustio and pernio, exanthematica, bullosa, and gangrenosa. The non-inflammatory affections are, anæmiæ, congestus sanguinis, and hæmorrhagiæ; diseases of the secreting functions, ephidrosis and epidermidis exfoliatio; and neuroses, anæsthesia and hyperæsthesia. Faulty structure or unusual state of one or other of the elementary components of the skin, embraces: disorders of pigment; hypertrophiæ, as of the papillæ and epidermis, of the vessels, constituting nævus, of the corium as in kelis and elephantiasis Arabum; gangræna simplex; cicatrices; defectus congenitus cutis; and extensio vel relaxatio insolita cutis. While the degenerations of structure are, fibrous, melanotic, and tuberculous.

Turning from the visible to the invisible; from the particular to the general; we shall find that efforts have not been wanting to establish a classification upon the presumed *cause* of the disease. The theory of the dependence of a disease upon a constitutional or upon a local cause, dates back to the age of Hippocrates, and has been adopted in modern times by Lorry, and more recently by Baumés in his "Nouvelle Dermatologie." We have ourselves attempted an *etiological classification*, in which we arranged the diseases of the skin proper into five groups, as follows:—

1. Diseases arising from general causes.
2. Diseases arising from special external causes.
3. Diseases arising from special internal causes.
4. Diseases arising from the syphilitic poison.
5. Diseases arising from poisons of unknown origin, and giving rise to eruptive fevers.

The general causes here referred to, are such as originate in nutritive, assimilative, and nervous debility; and the diseases included under this head, the erythemata, for example, erythema, erysipelas, urticaria, and roseola; the papulæ, lichen, strophulus, and prurigo; the vesiculæ, eczema and sudamina; the bullæ, herpes and pemphigus; the pustulæ, impetigo and ecthyma; the furunculi including anthrax; and purpura. Special external causes are illustrated by the irritation of animals upon, or under the skin, and by the action of heat and cold; and special internal causes, by diathesis, as in the case of alphos, lupus, scrofuloderma, kelis, and elephantiasis Græcorum. The syphilitic poison as a cause of syphilodermata is self-evident; as also are the poisons which give origin to rubeola, scarlatina, variola, and vaccinia.

The idea of constructing a classification which should have for its object a practical aim; which should be founded on the nature, affinities, and cause of cutaneous disease, and consist of a few primary groups, each containing a number of diseases, more or less closely united by family resemblance, and amenable to a similarity of treatment, is a merit which is due to Alibert; and although the classification of Alibert has not become popular, probably from defective composition of his groups, the idea of a natural classification must be regarded as an important step in the progress of dermatological medicine. The scheme of Alibert was composed of twelve divisions, and these twelve groups, the so called branches of the "tree of the dermatoses," are as follows:—

ALIBERT'S CLASSIFICATION (1810).

Eczematous.
Exanthematous.
Tineous.
Dartrous.
Cancerous.
Leprous.
Syphilous.
Strumous.
Scabious.
Hæmatous.
Dyschromatous.
Heteromorphous.

The term *eczematous* is used in the sense of "eruptive," and has no reference to the disease which we at present term eczema; the *eczematous dermatoses* being, erythema, erysipelas, pemphix, zoster, phlyzacia, cnidosis (urticaria), epinyctis, olophlyctis (herpes), ophlyctis (aphtha), pyrophlyctis (bulla ambustionis), anthrax, and furunculus.

The *exanthematous dermatoses* comprehend: variola, vaccinia, clavelée (variola ovina), varicella, nirle (a varioloid), roseola, rubeola, scarlatina, and miliaria.

The *tineous dermatoses* are: achor, porrigo, favus, and trichoma (plica polonica).

The *dartrous dermatoses* consist of herpes, under which name he comprises the squamous diseases, lepra vulgaris, psoriasis and pityriasis; varus (acne and sycosis), melitagra (impetigo), and esthioméne or lupus.

The *cancerous dermatoses* include, carcinoma, and keloid;—

The *leprous dermatoses*, leuce, spiloplaxia, elephantiasis, and radsyge (a syphiloderma);—

The *syphilous dermatoses*, syphilis, and mycosis (frambœsia);—

The *strumous dermatoses*, scrofula, and farcinoma;—

The *scabious dermatoses*, scabies, and prurigo;—

The *hæmatous dermatoses*, peliosis (purpura), and petechiæ;—

The *dyschromatous dermatoses*, pannus (a generic term for lentigo), ephelis, pityriasis versicolor, and pityriasis nigra; and—

The *heteromorphous dermatoses*, namely, ichthyosis, tylosis, verruca, onygos (onychia), dermatolysia (abnormal extensibility of skin), and nævus.

If we run the eye over the classification of Alibert with the view of discovering the special features represented by the terms which he has employed; we shall find them to be as follows: 1. eruptions having the general characters of inflammation; 2. febrile affections; 3. affections of the scalp; 4. tetters, or chronic scaly eruptions; 5. cancers; 6. affections related to leprosy; 7. diseases originating in the poison of syphilis; 8. scrofulous affections; 9. pruriginous affections; 10. diseases of dyscrasis of the blood; 11. alterations of color; and 12. diseases not included in preceding groups.

One of the most recent of the professors of the French school, Hardy after doing full justice to the classification of Willan, gives a preference to the natural classification as advocated by Alibert, and arranges the diseases of the skin proper into ten classes, as follows:—

1. Maculæ: deformities.
2. Local inflammations.
3. Parasitic affections.
4. Eruptive fevers.
5. Symptomatic eruptions.
6. Dartres.
7. Scrofulides.
8. Syphilides.
9. Cancers.
10. Exotic diseases.

Maculæ, deformities; include morbid alterations of color, ephelis, lentigo, together with warts, molluscum, ichthyosis, and kelis. The local inflammatious are, erythema, urticaria, herpes, ecthyma, pemphigus, &c.; and parasitic affections, scabies, sycosis, herpes circinatus, and favus. The eruptive fevers are scarlatina, rubeola, variola, &c., and the symptomatic eruptions, herpes labialis, typhus spots, sudamina, and purpura. The dartres are, eczema, psoriasis (lepra vulgaris), lichen, and pityriasis. The scrofulous, syphilitic, and cancerous affections speak for themselves; while the exotic diseases comprehend, among others, lepra tuberculosa and pian.[1]

Another eminent dermopathologist and author of the French school, a predecessor of Hardy, namely, Devergie, expresses dissatisfaction with all existing classifications; criticism, he remarks, is an easy task; but what shall we substitute in place of these classifications? To this question he replies by a confession of incapacity; the efforts of Bazin and Hardy, he says, are as little successful as those of their predecessors, and Bazin, like ourselves, has criticized, without elevating anything in the place of that which he destroys. Nevertheless, we are under the necessity of framing a scheme which shall have the appearance of logical order; and, therefore, we have submitted to the idea of creating certain morbid groups: the motives which have

[1] **Leçons sur les Maladies de la Peau, etc., 1863.**

guided us in the construction of these groups being: 1. Analogy of cause and treatment; 2. Morbid forms; 3. Morbid products; 4. Climatic origin. In this way we have succeeded in assembling diseases of the skin, in fourteen groups, as follows:—

DEVERGIE'S CLASSIFICATION (1857).

1. Erythema, urticaria, roseola.
2. Eczema, herpes.
3. Pemphigus, ecthyma cachecticum. rupia, purpura, scorbutus.
4. Impetigo, ecthyma, sycosis, acne simplex et rosacea.
5. Lichen, prurigo, strophulus.
6. Pityriasis, psoriasis, lepra vulgaris, ichthyosis.
7. Tinea, herpes tonsurans, porrigo decalvans, sycosis, herpes circinatus, pityriasis versicolar, plica.
8. Scabies, phtheiriasis, acne punctata.
9. Lupus, scrofulo-syphilides.
10. Syphilides.
11. Pellagra, lepra, Aleppo boil, pian, kelis, molluscum, plica.
12. Abnormal and accidental products.
13. Diseases of nails.
14. Affections of the hair; especially that of the suckling infant.
   Diseases of particular regions of the body.

Lastly, we have the classification of Hebra, who advocates the idea of the homogeneity of the skin with the rest of the economy, and takes, as the groundwork of his arrangement, the pathology of the general system, adapting this pathological framework to the special organ, the skin:—his classification is as follows:—

1. Hyperæmiæ.
2. Anæmiæ.
3. Anomaliæ secretionum et organorum secernentium cutis
4. Exsudationes.
5. Hæmorrhagiæ.
6. Hypertrophiæ.
7. Atrophiæ,
8. Neoplasmata (homœoplasiæ).
9. Pseudoplasmata (heteroplasiæ).
10. Ulcerationes.
11. Neuroses.
12. Parasitæ.

The hyperæmiæ are active and passive, and each division idiopathic and symptomatic; the *active idiopathic* diseases being, erythema traumaticum, caloricum, et ab acribus seu venatum; the *symptomatic*, erythema seu roseola infantilis, variolosa, et vaccina; the *passive idiopathic* diseases are, livedo mechanica et calorica; the *symptomatic*, cyanosis.

2. The anæmiæ, are, anæmia ex jacturâ sanguinis; and anæmia ex inervatione anomalâ.

3. Anomaliæ secretionum et organorum secernentium cutis, are applicable to the sebaceous and perspiratory secretion; the sebaceous secretion may be excessive, deficient and faulty; both in quality and excretion; giving rise to seborrhœa, dryness of skin, also to comedo, milium, and molluscum contagiosum. The sudatory secretion may present anomalies of quantity, as in ephidrosis and anidrosis; and,

anomalies of quality, as in odor hircinus, uridrosis, galactidrosis, and menidrosis.

4. Exsudata: that is, inflammation of the skin accompanied with exudation from the bloodvessels of inflammatory products, are arranged as follows: *acute contagious*, morbilli, scarlatina, variola, vaccinia; *non-contagious*, erythemata polymorpha, roseola, urticaria; dermatitis idiopathica; dermatitis symptomatica, erysipelas, furunculus, anthrax, pseudo-erysipelas, farcinoma, pustula maligna; phlyctænosen, herpes, miliaria, sudamina, pemphigus acutus. *Chronic;* dermatoses squamosæ, psoriasis seu lepra Willani, lichen exsudativus, pityriasis rubra; dermatoses pruriginosæ, eczema, scabies, prurigo; dermatoses acneformæ, acne vulgaris, sycosis, acne rosacea; dermatoses pustulosæ, impetigo, ecthyma; dermatoses pemphigosæ, pemphigus chronicus.

5. Hæmorrhagiæ: purpura.

6. Hypertrophiæ: *epidermis,* lichen pilaris, tyloma, clavus; pityriasis simplex, ichthyosis, verrucæ, nævus verrucosus; *pigment,* lentigo, chloasma, melasma, nævus spilus, pityriasis versicolor et nigra; *corium,* elephantiasis Arabum; *follicles,* sebaceous, hair-follicles; *appendages,* excess of hair, cornu cutaneum, supernumerary nails, thickening of nails.

7. Atrophiæ: epidermis, pigment, cutis, follicles, appendages as hair and nails.

8. Neoplasmata: epidermis, condyloma; areolar tissue, molluscum simplex, acne rosacea, lupus; fibrous tissue, cicatrices, keloid, callus; fatty tissue; vascular tissue; cholesteatomatous; osseous tissue; melanotic.

9. Pseudoplasmata: cancer, tubercle.

10. Ulcerationes: idiopathicæ, symptomaticæ.

11. Neuroses: hyperæsthesia, anæsthesia, dermatospasmus.

12. Parasiticæ: *dermatophyta,* favus, alopecia, sycosis; dermatozoa, pediculi, acarus folliculorum, sarcoptes hominis.

Of the twelve classes of Hebra, six rest upon a foundation of visual characters, for example: hyperæmiæ, anæmiæ, hæmorrhagicæ, hypertrophiæ, atrophiæ, and parasitæ; and the remaining six, upon characters partly physiological, but chiefly pathological, namely: anomaliæ secretionum et organorum secernentium cutis, neoplasmata, exsudata, pseudoplasmata, ulcerationes, and neuroses. The class, exsudata, comprehends inflammation and the products of inflammation, and, consequently, includes the great proportion of diseases of the skin, indeed, nearly the whole of the diseases composing Willan's classification; therefore, in comparing the different classifications, we see a reason for the apparent simplicity of that of Willan, namely, that it divides among seven orders, diseases, which are embraced by Hebra, under the single word, exsudata; but seeing this to be the case, if it be our intention to subdivide, with a view to simplification of comprehension and of study, the group of exsudata calls for a special classification of its own. The exsudata of Hebra contains upwards of twenty-six separate diseases, held together by the slender thread of their origin in inflammation, and their evolution of inflammatory products, whether in the shape of infiltration or exudation of serum, pus, or abnormal epidermal tissue; and these twenty-six diseases are divided primarily, into *acute* and *chronic;* and, secondarily, into nine sub-groups; thus: the *acute* exsudata are divided into, contagious, non-contagious, dermatitides, and phlyctænosen; and the *chronic* exsudata into, squamous affections, pruriginous affections, acneform affections, pustular affections, and pemphigous affections. The fourteen constituents of the acute exsudata are: rubeola, scarlatina, variola, vaccinia, erythema, exsudativum, roseola, urticaria, dermatitis idiopathica, erysipelas, furunculus, anthrax, herpes, miliaria, and pemphigus acutus, with some others. The twelve constituents of the chronic exsudata are: psoriasis seu lepra Willani (alphos), lichen, pityriasis, rubra, eczema, scabies, prurigo, acne, sycosis, acne rosacea, impetigo, ecthyma, and pemphigus chronicus.

In reviewing the preceding classifications, for the purpose of ascertaining the leading idea which has suggested their construction, we shall find these ideas, with the exception of that of the pathological classification of Hebra, to be five in number; namely, seat of the disease; amenability to treatment; cause, as being constitutional or local; visual characters; and, nature and properties of the affection. The *seat* of the disease is suggestive of certain peculiarities evinced by cutaneous disease when it attacks different regions of the body, as the scalp, the face, the hands, and the feet; but does not afford sufficient ground for a classification of the whole of the diseases of the skin, and the less so, as the same disease may one while be a general affection, and another while be limited to a part. If we were required to instance a disease peculiar to the scalp, we might name tinea or favus, but tinea and favus are both found occasionally on other regions of the body, the only possible reason for the distinction in question being, the modification which diseases of the scalp undergo from the presence of hair.

Amenability to treatment affords as little scope for classification as that which is founded on the seat of the disease, and is an uncertain ground of distinction; diseases which, in the time of Celsus, may have been classed as fit to be treated by diet alone, may, with our present knowledge, be more successfully controlled by medicines; the incurable diseases of a few years back may at present be perfectly curable; and that which seems indomitable to-day may, a few years hence, be conquered with ease. Similar objections may be raised to the grouping of diseases under the head of specific remedies, for example, arsenic, sulphur, tar, &c.

The cause of the disease, if it could be determined with accuracy, would be a legitimate ground of classification; but the proposed cause of a disease is, in many instances, a mere matter of opinion, and obeys the leading theory of the day. In our early study of medicine all local diseases were referred to a constitutional cause; functional disturbance of the chylopoietic system was supposed to give rise to morbid humors, and the manifestation of this morbid state might be evinced by any of the organs of the body, and among others, by the skin; or, there existed a morbid alteration in the constitution of the blood; and the operation of these morbid elements, either in the sens of deposition or elimination, became the explanation of cutaneous disease. One while, the theory of the day inclined to humoralism and constitutional management; and another while, to solidism and favored local treatment. Whilst, at the present time, the tissue or cell-theory of disease, is gaining favor, and still further creating a preference for local measures. If it were possible to fix the theory of medicine by a given standard, there might be found a solid basis for an arrangement of disease founded on an acknowledged cause; but until that is the case, our attempts in this direction must be in vain.

If we reject regional position, therapeutical control, and constitutional or local influence, as affording sufficient grounds for the construction of a classification, there remain for our consideration only, the physical signs, which form the groundwork of the classification of Willan; and, the special characters of the disease in reference to nature and cause, as suggested by Alibert. And, if we now turn to the diseases themselves, and measure their capabilities by this standard, we shall find that it is impossible to bring the whole of the diseases of the skin under either of these two heads; that some will conform better to the former and others to the latter; and that a rational or practical classification requires that we should retain the best parts of both. The advocate of the Willanean system discovers the imperfection of his method when he comes to the consideration of diseases of diathesis, such as scrofuloderma, or of blood poisons, as in the instance of the eruptive fevers, syphiloderma, and elephantiasis; and, the follower of the natural system is equally at fault, in the case of those diseases whose only conspicuous character is the external appearance or pathological lesion. Considerations of this kind have led us to frame a classification upon a purely practical basis, without regard to the distinctions hereinbefore referred to; and this classification we have taken as the plan of arrangement of the subject matter of the present volume. We assume that we are placed by the bedside of the patient, and that the view that should be taken of the disease before us ought to be such as will embrace all the practical bearings of the disease, and lead inferentially to the soundest method of treatment. The classification in question, which we call the *clinical classification,* is as follows:—

1. Eczematous affections.
2. Erythematous affections.
3. Bullous affections.
4. Furuncular affections.
5. Nervous affections.
6. Vascular affections.
7. Hæmic affections.
8. Developmental and nutritive affections.
9. Hypertrophic and atrophic affections.
10. Alphous affections.
11. Strumous affections.
12. Carcinomatous affections.
13. Zymotic affections.
14. Syphilitic affections.
15. Leprous affections.
16. Pigmentary affections.
17. Phytodermic affections.
18. Ungual affections.
19. Diseases of the hair-system.
20. Diseases of the sebiparous system.
21. Diseases of the sudoriparous system.
22. Traumatic affections.

These twenty-two groups include all the diseases of the skin, of the skin proper, as well as of the hair system, and the gland system. Takng them in their order, it will be seen that the first four, namely, eczematous, erythematous, bullous, and furuncular affections, embody the diseases which involve the *general structure of the derma.* The fifth, sixth, and seventh groups are devoted to the consideration of the nerves, the vessels, and the blood, constituting a part of the *special structure of the derma.* The eighth and ninth groups comprehend the morbid changes taking place in the skin, the consequence of errors of *development, nutrition,* and *growth.* The tenth, eleventh, and twelfth groups consist of the diseases of *diathesis:* for example, alphos (lepra Willani), struma, and carcinoma. The thirteenth, fourteenth, and fifteenth groups include the diseases resulting from a *blood-poison,* namely, the zymotic affections, syphilitic affections, and the leprous affections. The sixteenth, seventeenth, and eighteenth groups consist of diseases limited especially to the *epidermis,* for example, the pigmentary affections, phytodermic affections, and ungual affections. The nineteenth, twentieth, and twenty-first groups include the diseases of the *follicles* of the skin and their dependencies, namely, the hair system, sebiparous system, and sudoriparous system; and the twenty-second group is devoted to *diseases induced by injury,* in other terms, traumatic affections. If we assemble the individual groups according to this arrangement of the subject, they may be stated as follows:—

1. Diseases of the general structure of the derma.
2. Diseases of the special structure of the derma.
3. Diseases of development, nutrition, and growth.
4. Diseases of diathesis.
5. Diseases resulting from blood-poison.
6. Diseases of the epidermis.
7. Diseases of the follicular apparatus and hairs.
8. Traumatic diseases.

And the eight groups might, upon a physiological basis, be further reduced to half that number, as follows:—

1. Dermal affections.
2. Epidermal affections.
3. Follicular affections.
4. Traumatic affections.

The dermal affections, including:—

a. Diseases of general structure.
b. Diseases of special structure.
c. Diseases of function.
d. Diseases of diathesis.
e. Diseases of blood-poisoning.

The individual diseases arranged under the above twenty-two groups, are as follows:—

1. Eczematous affections.

Eczema,
Psoriasis,
Pityriasis,
Lichen,
Strophulus,
Impetigo,
Scabies,
Gutta rosacea.

2. Erythematous affections.

Erythema,
Erysipelas,
Urticaria,
Roseola.

3. Bullous affections.

Herpes,
Miliaria,
Pemphigus.

4. Furuncular affections.

Ecthyma,
Furunculus,
Hordeolum,
Anthrax,
Pustula maligna,
Pustula Alleppensis.

5. Nervous affections.

Hyperæsthesia,
Anæsthesia,
Pruritus,
Prurigo.

6. Vascular affections.

Nævus vasculosus,
Hypertrophia venar

7. Hæmodyscrasic affections.

Purpura.

8. Developmental and nutritive affections.

Xeroderma.
Ichthyosis,
Sauriosis,
Cacotrophia cutis.

9. Hypertrophic and atrophic affections.

Nævus hypertrophicus,
Ecphyma,
Verruca,
Clavus,
Dermatolysis,
Kelis,
Boucnemia,
Atrophia cutis.

10. Alphous affections.

Alphos, seu lepra Willani.

11. Strumous affections.

Scrofuloderma,
Lupus.

12. Carcinomatous affections.

Epithelioma,
Carcinoma cutis.

13. Zymotic affections.

Rubeola,
Scarlatina,
Variola,
Varicella,
Vaccinia,
Equinia.

14. Syphilitic affections.

Syphiloderma.

15. Leprous affections.

Elephantiasis Græcorum vel Lepra,
Morphœa.

16. Pigmentary affections.

Melanopathia,
Xanthopathia,
Lentigo,
Chloasma,
Cyanopathia,
Leucopathia.

17. Phytodermic affections.

Nosophyta.

18. Ungual affections.

Degeneratio unguium,
Onychia.

19. Diseases of the hair system.

Hirsuties,
Alopecia,
Canities,
Fragilitas crinium,
Trichonosis vel Tinea,
Morbi sebacei,
Favus,
Kerion,
Sycosis.

20. Diseases of the sebiparous system.

Epidermic hypertrophy,
Epithelial hypertrophy,
Cancroid hypertrophy,
Stearrhœa,
Asteotodes,
Allosteotodes,
Comedones,
Tumores sebipari,
Tumores encystici,
Tubercula sebacea,
Acne.

21. Diseases of the sudoriparous system.

Idrosis vel ephidrosis,
Anidrosis,
Osmidrosis,
Chromidrosis,
Hæmidrosis.

22. Traumatic affections.

Malis seu maliasmus,
Ambustio,
Gelatio.

The CLINICAL CLASSIFICATION is founded on a certain knowledge he diseases which it assembles together; it assumes that its terms, example, eczematous, erythematous, bullous, furuncular, &c., body a precise idea, and carry with them, not only a notion of nature of the disease, but also of the method to be pursued in treatment. It has another practical bearing; it brings together ases, which, taken alone, would seem to be distinct and independent of each other, for example, eczema, lichen, impetigo, and gutta rosacea; but which, in reality, are due to a similar pathological condition, and yield to the same principle of treatment. These are the objects which are sought for by the promoters of a natural classification, and the aim of such a classification is evidently of a practical nature. But it must be remembered, also, that the first object of study of cutaneous disease, is not to treat, but to know disease, to know, to acquire the power of correct diagnosis; that, at a future time, we may be able to treat successfully. And then the question arises, is a natural system the best for the study of disease, as we admit it to be the best for the practice of treatment? Clearly it is not; the details of study will be acquired best through the aid of the classification founded on the signs and appearances of disease, the Willanean classification. The Willanean system is the grammar of cutaneous medicine, and should be thoroughly studied and understood before the views embodied in the natural classification are undertaken. Hence, also, instead of rejecting the Willanean classification, we should use our best endeavors to improve it as far as possible. With this view, we would propose an amendment of the Willanean classification, suitable to the purposes of the student, as follows:—

WILLANEAN CLASSIFICATION (AMENDED).

1. EXANTHEMATA.

Erythema,
Erysipelas,
Urticaria,
Roseola,
Rubeola,
Scarlatina,
* Syphiloderma roseolosum,
* Eczema erythematosum,
* Gutta rosacea erythematosa.

2. BULLÆ.

Pemphigus,
* Syphiloderma bullosum.

3. VESICULÆ.

Herpes,
Miliaria,
Vaccinia,
Varicella,
* Eczema vesiculosum,
* Scabies vesicularis.

4. PUSTULÆ.

Impetigo,
Ecthyma,
* Variola,
* Eczema pustulosum,
* Scabies purulenta,
* Gutta rosacea pustulosa.

5. PAPULÆ.

Lichen,
Strophulus,
Prurigo,
* Gutta rosacea papulosa,
* Scabies papuliformis,
* Syphiloderma papulosum.

---

* The diseases marked with an asterisk will be repeated in other groups.

6. TUBERCULA.

Phyma,
Verruca,
Molluscum,
Acne,
Sycosis,
Lupus,
Elephantiasis,
* Gutta rosacea tuberculosa,
* Syphiloderma tuberculatum.

7. SQUAMÆ.

Alphos (lepra Willani),
Psoriasis (eczema squamosum),
Pityriasis (erythema squamosum),
Xeroderma (ichthyosis).

8. MACULÆ.

Vascular hypertrophy; nævus.
Alteration of pigment; ephelis, spilus.

To which may be added the diseases presenting several pathological forms, namely:—

POLYMORPHIC GROUP.

Eczema,
Scabies,
Gutta rosacea,
Variola,
Syphiloderma.

The amended Willanean classification will also serve as an aid to diagnosis; thus, a disease being ascertained to be vesicular, it is probably a herpes, a miliaria, or a varicella; but, it may also be an eczema, or a scabies; or, a pustular affection, probably an impetigo or an ecthyma, might also be an eczema, a sqabies, a gutta rosacea, or a variola.

CHAPTER IV.

THERAPEUTICS OF THE SKIN.

For the purposes of therapeutical treatment, cutaneous diseases may be regarded as a state of lowered vitality of the skin, originating in a debility which is either local or general. In the former case the treatment required is simply *local*, and in the latter it must be *constitutional* as well as local. The commonest form of manifestation of lowered vitality of the skin is accompanied with inflammation; but, there are other forms, in which no inflammation is present; hence, a very natural division of cutaneous diseases into inflammatory and non-inflammatory. We have therefore to ascertain, when a cutaneous disease is brought under our observation, in the first place, whether it be inflammatory or non-inflammatory; secondly, whether it be accompanied with constitutional symptoms or not; and thirdly, whether the constitutional symptoms be such as result from common or specific functional disorder. We may quote, as examples of these diversities of manifestation of cutaneous disease, namely, of the inflammatory type, eczema and erysipelas; of the non-inflammatory type, prurigo and ichthyosis; the two former affections are accompanied by constitutional symptoms; the two latter are not; the constitutional symptoms accompanying eczema and erysipelas are, common disorder of the organic functions of the body; but in another group of diseases of the inflammatory type attended with constitutional symptoms, those symptoms have a specific character, for example, the exanthematic fevers and syphiloderma.

Therapeutical treatment, therefore, resolves itself into treatment of the part alone; and treatment of the part conjointly with the general constitution. There are certain forms of disease in which local treatment may be all that is called for; but, whenever any disturbance of general health exists, such disturbance will tend to aggravate the local affection, even if it have no relation to it as a cause; and, consequently, requires an equal attention with the local disease. In some instances, it is evident that the local disease is first in importance, as in the case of eczema; while in others, as in syphiloderma and the zymotic affections, local treatment is entirely secondary, and often unnecessary.

Local treatment has for its object, to subdue irritation and pain; to remove irritants; to shield and protect from irritation; to cause and to check exudation; to restore tone by judicious stimulation; and, in some instances, to remove and destroy, either by the aid of caustics or with the knife.

Constitutional treatment is intended to regulate the whole of the organic functions, and particularly digestion and secretion; and subsequently, to restore power by the aid of tonics. Not unfrequently, the mere regulation of the organic functions, by withdrawing an impediment to healthy action, is sufficient in itself to restore power; as in cases, where languid and imperfect digestion, or torpid secretion of the liver or bowels interfere with sanguification and nutrition; at other times, these functions being put in order, the vital action demands the further impulse to be obtained from digestive tonics, and sometimes, neuro-tonics.

Under the head of constitutional treatment, diet occupies an important place; as also do the hygienic principles, air, exercise, and ablution.

THE LOCAL REMEDIES applicable to cutaneous disease may be ranged under the seven following heads, namely: aqueous, spirituous, oleaginous, pulverulent, antipruriginous, discutient, and caustic. Aqueous remedies present themselves in the form of simple water, in its various states of cold, tepid, warm, hot, and steam; water impregnated with saline matter, as in the sea-bath and saline solutions, lotions, fomentations, and poultices. Water may be sedative, emollient, or stimulant, according to the manner in which it be employed. As a tepid bath or fomentation it is sedative, and its sedative qualities are increased by the addition of various substances, such as oatmeal, starch, gelatine, and soda in small quantity. It is emollient when used as a water dressing, or in the condition of steam; and it is stimulant when cold or hot. When hot, it is the best means known of relieving pruritus; and in its cold state, it refreshes and gives vigor to the skin; hence the morning bath, the sea-bath, and daily ablutions with soap. On this principle it is that we advise daily cold ablutions with soap of the face in cases of acne, and to other parts of the body, particularly the axillæ and perinæum in chronic eczema or chronic pruritus. Aqueous lotions of liquor plumbi are refrigerant and sedative; while lotions of carbolic acid, sulphuret of potash, acetate of ammonia, and bicarbonate of ammonia are anti-pruritic. Warm fomentations are sedative and anodyne, and their properties are increased by the addition of decoction of poppy heads. Poultices also are a means of applying moisture to the skin, sometimes cold, as in the instance of the starch poultice; sometimes hot, as in the bread and linseed poultice; and sometimes in conjunction with carbonic acid, as in the yeast poultice. Poultices are emollient and sedative; but their protracted use, as of all aqueous applications, macerates and weakens the skin, and tends to perpetuate the disease, or to generate boils. As a rule, all aqueous applications, except simple bathing, must be employed with great judgment and caution in cutaneous diseases. Saponaceous ablutions commonly aggravate eczematous affections, but there are certain forms and stages of that disease which are benefited by their use.

Spirituous lotions are refrigerant and sedative; and we combine with them, sometimes other sedatives, such as acetate of lead, tincture of opium, and hydrocyanic acid; and sometimes stimulants, when we intend them to act as discutients, as in the instance of a spirituous solution of the bichloride of mercury; or, by direct stimulation, when we make the addition of cantharides, iodine, or the tincture of croton seeds. A lotion of spirits of wine and sulphuric æther is a means of great relief in erythema of the eyelids; and a lotion of emulsion of bitter almonds with spirits of wine and hydrocyanic acid, an useful remedy for pruritus.

Oleaginous applications have for their especial purpose, the relief of a dry, parched surface; they serve also to sheath a tender and excoriated derma; they exclude the atmosphere and external causes of irritation; and they preserve the moisture of the disordered skin. Sometimes these results are obtained by simply moistening the surface with a glycerine lotion or with the glycerine paste, with an emulsion of almonds, or an oily emulsion, such as the linimentum calcis. At other times, we may have recourse to ointments and cerates, and employ them by merely smearing the surface; or use them as dressings, to be kept steadily applied by means of a bandage. For the relief of irritation and pruritus we may obtain valuable aid from the unguentum plumbi subacetatis, or camphor combined with benzoated lard. As an unirritating protection and sheath to the excoriated skin, the benzoated ointment of oxide of zinc is superior to every other; and, for a similar purpose, the unguentum plumbi compositum is also useful. As stimulants and discutients, we have valuable remedies in the unguentum sulphuris; the unguentum sulphuris hypochloridi; and an ointment of the iodide of sulphur (gr. x—xx ad ℥j). Belonging to the same class are the mercurial ointments, diluted in accordance with the purpose required; the unguentum hydrargyri oxidi rubri; the unguentum hydrargyri nitratis; the unguentum hydrargyri ammoniati; and the unguentum hydrargyri bichloridi: while, in ulceration, we possess an admirable ointment in the unguentum resinæ or the unguentum balsami peruviani.

Pulverulent remedies are absorbent and desiccative; sometimes cooling, and frequently sedative, from their property of maintaining an equable temperature and protecting the surface from the action of the atmosphere. A pulverulent application is popularized in erysipelas in the use of the flour dredger. Starch powder also is useful for a similar purpose, and is suitable to erythema, pemphigus, and some forms of eczema. For other purposes we may combine the oxide of zinc with starch powder, the pulvis calaminaris, precipitated chalk, or the powder of Peruvian bark. The latter alone is an excellent remedy in the sloughing stage of carbuncle; in ulcers; and in diseases attended with sphacelus. On extensive surfaces, as in cases of erythematous burn and moist eczema, we may derive advantage from the application of chalk in a fluid state, leaving it to dry upon the inflamed surface.

Antipruriginous remedies are intended to relieve that most annoying and vexatious symptom, pruritus, which accompanies so many disorders of the skin. First, among these remedies, is water as hot as it can be borne, applied by means of a sponge; then follow, vinegar, hot and cold; lemon juice; solutions of carbonate and acetate of ammonia; camphor cerate; refrigerant salts; hydrocyanic acid; ointment of cyanide of potassium; the juice of the chelidonium majus in solution in glycerine; and the various preparations of tar, unguentum picis juniperi, unguentum picis liquidæ, the juniper tar lotion, juniper tar soap, coal tar lotion, carbolic acid lotion and soap, and creosote. In neuralgic pruritus, and in the neuralgia of shingles, we prescribe with much benefit frictions with a liniment consisting of linimentum belladonnæ, cajeput oil and chloroform, or the linimentum aconiti.

Discutients form a very valuable class of remedies in cutaneous complaints. They are stimulant in their operation, and take the place of tonics among external medicines. The simplest but not the least important members of this class, are the various soaps, simple and medicated, the hard or soda soap, potash or soft soap, the juniper tar soap, carbolic acid soap, petroleum soap, larch soap (sapo laricis, Moore), sulphur soap, zinc soap, fuller's earth soap, and glycerine soap; alkaline solution, solution of sulphite of soda, strong potash solution, solution of chloride of zinc, solution of pentesulphide of calcium; with ointments of tar, sulphur, mercury, and iodine. And we may include in this enumeration, the hypochloride of sulphur ointment, the iodide of sulphur, and the ointment of sulphur and tar; the nitric oxide, nitrate, and ammoniated chloride of mercury, ointments; the ointments of iodide, biniode and chloriodide of mercury; the iodide of potash ointment; solutions of iodine in spirit and glycerine;

and solutions of nitrate of silver in nitric ether and water of various strength.

The caustic remedies are, nitrate of silver; acid nitrate of mercury; potassa fusa, in stick and solution; chloride of zinc; nitric acid; the mixture of potassa caustica and quicklime, called Vienna paste; arsenicated glycerine; arsenical paste; iodine; biniodide of mercury; anhydrous sulphate of iron or zinc; and the fluor caustic ether of Dr. Richardson.

CONSTITUTIONAL REMEDIES should have for their object to regulate digestion and secretion; to promote assimilation and nutrition; to improve tone and innervation; in a word, to strengthen and invigorate, and establish the maximum of vital power and health. Very few instances of cutaneous disease occur in which a fault may not be discovered in the assimilative, the nutritive, or the nervous power, and this should in the first instance be redressed: it may be that the error is one of the stomach or alimentary canal; of the liver or kidneys; of the uterus; the lungs or heart, or of the organic nervous system. Disordered tissue, unless it proceed from a direct local cause, implies weakened general restorative power; sometimes, as in nutritive debility, the normal standard of power has never been attained; sometimes, exhaustion of power is greater than its growth; sometimes, the organs of supply are deranged; and, sometimes, power has declined from the advance of age. All these considerations must be carefully appreciated and weighed before we can hope to treat cutaneous diseases, or, indeed, any diseased action correctly and successfully.

Our internal remedies belong principally to the class of aperients, tonics, and alteratives; and their dose must be regulated by the age and power of the patient, as well as by the nature of the disease. As aperients, in the form of pill, we may employ colocynth, aloes, scammony, rhubarb, podophyllin, blue pill, and calomel, in combination with ipecacuanha, squill, assafœtida, hyoscyamus, belladonna, or soap, according to the indication required; while, in a gouty diathesis, we may make the addition of the acetous extract of colchicum. If we prefer powders, we have the hydrargyrum cum cretâ, rhubarb, jalap, scammony, sulphur, and guaiacum. While, for fluid aperients, we may select the neutral salts of magnesia, soda, and potash, or the vegetable infusions of rhubarb, or senna, or castor oil.

Our tonic remedies may be grouped into digestive tonics, or such as act specially on the mucous membrane of the alimentary canal; muscular tonics, which give tone to the muscular system; and neurotonics, which exert their influence on the nervous system. The digestive tonics include the vegetable bitters, gentian, orangepeel, calumba, cinchona, quassia, hop, and chamomile, which may be combined with the mineral acids, hydrochloric, nitric, sulphuric, and phosphoric; or, if the intention be to neutralize acid secretions, or act chiefly upon the urinary mucous membrane, they may be made the vehicle of soda, potash, or ammonia. The muscular tonics are, nux vomica, strychnine, and ergot; and the neurotonics, quinine, iron, bismuth, phosphoric acid, and arsenic. In the administration of aperients it is judicious to combine with them a tonic; as in the instance of sulphate of magnesia, quinine, sulphuric acid and infusion of orange-peel. With the tincture of gentian and nitromuriatic acid we may prescribe a compound rhubarb pill. A combination of tonics is generally preferable, also, to their separate use, as in that admirable medicine, the citrate of iron and quinine, or in the superphosphate of iron.

Arsenic is a neurotonic of the first importance in the treatment of cutaneous diseases, from its remarkable property of stimulating the peripheral plexus of nerves; and this action is not limited to the skin, but extends to the peripheral nervous plexus of all the surfaces of the body, internal as well as external. We have evidence of this action in the production of heat in the skin, sometimes tingling, and sometimes hyperæmia, and, when the medicine is too strong in dose, or has been continued for too great a length of time, we may have numbness, cramps, and loss of muscular power. When administered with proper caution, there is no remedy more valuable in cutaneous medicine than arsenic; but to secure its successful use, it should be properly regulated in dose, in mode of administration, and as to period of continuance. Ordinarily, its exhibition in proper doses produces no symptoms apparent to the patient; sometimes the patient has the sensation of a strengthening influence; sometimes one of prostration of muscular power and depression of spirits; while, generally, the most obstinate condition of constipation is removed, and the bowels become regular. When the action of arsenic is unfavorable, its use must be immediately suspended; and its saturation of the system may be detected by redness and moisture of the conjunctiva, and sometimes dryness of that membrane. As the vascular condition of the gums is the test of the saturation of the system by mercury, so hyperæmia of the conjunctiva is the test of saturation of the system by arsenic.

Redness of the conjunctiva is not, therefore, to be regarded as a symptom of the morbid influence of arsenic, but simply as a proof of its constitutional operation; and, unless the redness increase to an inconvenient degree, the remedy need not be stopped. Vigilance of observation of our patients is always necessary where arsenic is administered, and the redness of conjunctiva gives a reason for increase of vigilance; while it is always judicious to give strict injunctions to the patient to stop the medicine the instant that any morbid symptoms are apparent; whether, in fact, they proceed from the remedy or not. Besides hyperæmia of the conjunctiva and tingling or numbness of the fingers, arsenic sometimes produces loss of appetite, nausea, colic, and swelling of the subcutaneous tissue of the face, hands, and feet, and sometimes of the abdomen; and another reason for caution is evinced in the suddenness with which the morbid symptoms will sometimes take place; a phenomenon usually ascribed to accumulation of the remedy in the system. Whether any such accumulation really takes place, is a question difficult to determine; and, where the medicine is administered in small doses and with care, such effects very rarely occur; indeed, can only occur as an idiosyncrasy. But its suddenness of action on the system is a fact beyond dispute; it may be taken for many months, as in the instance of alphos, without any influence on the disease being apparent; but suddenly, and in a week, the greater part of an extensive eruption may be gone. We cannot ascribe this suddenness of change to "cumulation;" and, it is not unlikely that the symptoms designated by that name may owe their existence to a similar suddenness of operation.

The loss of appetite which accompanies the adminstration of arsenic, has led us to the belief, that, besides being a neurotonic, it may also tend to the prevention of waste; and it may be, that to this circumstance, its known property of causing fattening of the body is due; possibly it arrests the destructive metamorphosis of the tissues, and may, therefore, become a valuable remedy in many diseases, besides those of the skin, where destruction of tissue is a conspicuous symptom. It is, possibly, for this reason also, that it acts so well in conjunction with iron and cod-liver oil. There can be no doubt that arsenic is an improver of assimilation and nutrition.

Arsenical remedies are somewhat numerous: there is the liquor arsenicalis, or Fowler's solution; the liquor arsenici chloridi, or solutio solventis mineralis of de Valangin; the liquor sodæ arseniatis; liquor ammoniæ arseniatis; the arseniate of quinine; arseniate of iron; arseniate of soda; the liquor hydriodatis hydrargyri et arsenici, or Donovan's solution; and, arsenic acid, as in the combination termed the "Asiatic pill;" while arsenic also affords several applications for external use, such as the solution of arsenic in glycerine, and in Dupuytren's powder, and the arsenical paste.

One of the best, and the most convenient of the arsenical remedies, is the liquor arsenicalis, or liquor potassæ arsenitis, or Fowler's solution, which we prefer to have made without the compound tincture of lavender, as the latter gives a flavor to the medicine, and is nauseous when taken for a length of time, or with the meals, as is necessary in the exhibition of arsenic. The dose of the potash solution ranges from one to five minims, that is from $\frac{1}{120}$ to $\frac{1}{24}$ of a grain of solid arsenic; one drachm of the solution containing half a grain, and one ounce four grains. The ammonia solution is of a similar strength to the potash solution, and the dose the same; but the acid solution of de Valangin is somewhat less than half the strength of the potash solution, consequently the dose should be double that of the latter. And the dose of the triple solution of Donovan may range from ten to thirty minims, taken three times in the day.

There is no age, and scarcely any circumstances, under which arsenic may not be administered when employed with judgment; to the youngest and most delicate infant, or to the most elderly person; and, if the account of its virtues which we have just given be correct, it is evident why it may be so universally used. If it be a nerve-tonic; a suspender of waste; and an improver of nutrition and sanguification; there can be no obstacle to its administration other than that, which arises from the development of its poisonous properties; and these poisonous properties we may control by a proper regulation of the dose; and, as we have already intimated, it is not in cutaneous diseases alone that the medicine is valuable, but possibly, in many diseases wherein arrest of waste and increase of nervous tone are desirable conditions. The formula which we prefer for its exhibition is the ferro-arsenical mixture; which will be found among the "selected formulæ" at the end of the volume.

Arsenic, as a medicine and as a food, has obtained additional interest of late years, from the discovery in Cumberland of a river which contains a notable quantity of that mineral in solution. The river runs through the village of Whitbeck, and the inhabitants of the village use the water exclusively for every purpose of life. Mr. Arthur Church[1] reports it to be so strong of arsenic, that ducks and trout are unable to live in the stream; but that, nevertheless, the inhabitants and their children are conspicuous for health and longevity. That, upon a late occasion, a railway was constructed near the village; and that some of the men and horses were inconvenienced by the use of the water; but, after a short time, the men acquired more than their usual strength, and the horses the sleekness of coat, for the production of which, arsenic is so remarkable. The unpleasant symptoms developed in the men, were soreness of mouth and a sense of constriction in the throat.

The river takes its rise in the Black Combe mountain, and the source of the arsenic is stated to be arsenical pyrites by Dr. John Davy,[2] and arsenical cobalt by Mr. Church. The mineral was first detected by Mr. Zenner of Newcastle; and the water has been recommended for medical purposes, and as likely to agree with the stomach better than an artificial solution, by Dr. George Robinson.[3] Dr. Davy remarks, that "It had the general character of the mountain streams of the Lake District, was perfectly clear and colorless, and tasteless. Of the several specimens obtained I found the specific gravity the same as that of distilled or rain water. When evaporated to dryness the residue was very small, a pint yielding about .25 of a grain; and, from the different specimens tried, not varying more than one-tenth of a grain. In each instance this residue was found to consist chiefly of common salt; it tasted of this salt, and in solution was copiously precipitated by nitrate of silver. Mixed with the common salt was a little magnesia and lime, both probably in combination with sulphuric acid, as sulphate of lime and magnesia, the presence of the acid being denoted by nitrate of barytes; a trace, too, of oxide of arsenic was detected in each, and, it may be inferred, in combination with potash, a trace of which was also obtained. The arsenic was detected, not only by the test of the ammoniaco-nitrate of silver, but also by reduction to its metallic state by sublimation, after mixture with ferrocyanide of potassium. Of the several specimens of water tried, that procured in October, when the stream was about its ordinary size, afforded a somewhat stronger trace of the metal than either the earlier or the later." In this case the quantity of the mineral present was about .008 of a grain in the pint, or .064 of a grain in the gallon; the precise form of combination being similar to that of Fowler's solution, namely, the arsenite of potash.

---

[1] Chemical News, August, 1860. [2] Edinburgh Philosophical Journal, 1863.

[3] On the Medicinal Use of Arsenicated Mineral Waters; with special reference to that of Whitbeck.—*Lancet*, 1863.

The alterative remedies used in the treatment of cutaneous diseases are, arsenic, sulphur, tar, cantharides, iodine, and mercury. An alterative is a remedy that requires to be continued for a considerable time; hence the dose should be smaller than for other purposes. This is especially the case in the instance of arsenic, iodine, and mercury; and these remedies may be given in a combined form as well as separately. For example, the triple solution of arsenic, iodine, and mercury; the iodide of mercury, &c. The arsenical preparations are especially useful in alphos; tar in the shape of pills or capsules has been found useful in the same disease; and so also has the tincture of cantharides, either alone or combined with arsenic; while mercury and iodine are especially serviceable in syphilodermata. Other remedies of the alterative class are dulcamara and sarsaparilla.

CHAPTER V.

ECZEMATOUS AFFECTIONS.

ECZEMA, *eruption*—for the word means nothing more—is the name of a large and important group of cutaneous affections. The term is met with in the writings of Dioscorides Phacas, who flourished one or two centuries before the Christian era; and a precise idea of the meaning of the term is given to us by Ætius, an author of the fourth century, in the following passage: "eas εκζεματα, ab ebulliente fervore, Græci vulgo appellant." According to this signification, the word eczema conveys the idea of heat, of the raising of bubbles upon the surface of a boiling fluid; the bubbles being the type of the vesicles of the eruption.

The ancient Greeks fixed upon another character of eczema in order to distinguish it, and called the disease PSORA, from ψαειν or ψωειν, to rub, because, on account of the itchiness of its nature, it created the necessity of rubbing or scratching. And the Romans, pursuing the same idea, termed it SCABIES, from scabere, to scratch. Thus we see, that in their original application, the three words, psora, scabies, and eczema, were synonymous; and for a long time the terms psora and scabies were associated with the same disease, the itch, eczema ab acaro; while, at the present day, we give the precedence of importance to eczema; scabies we regard as an eczema taking its origin in a special cause, the acarus scabiei; and the term psora we discard altogether, or retain only in its mitigated form, psoriasis, a term, the correct application of which has still to be settled; we, on the one side, maintaining that it should be assigned to a chronic eczema; while Hebra, Hardy, and others attach it to the lepra of Willan, the alphos of Celsus, and of ourselves.

The terms eczema, psora, and scabies are not, however, without their use in conveying an idea of the nature of the disease; it is an eruption which is hot, vesicular, and attended with an itching of so severe a degree as to incite to rubbing and scratching.

Eczema is the commonest of all the affections of the skin; in one thousand cases of cutaneous diseases of all kinds, and taken indiscriminately, it occurs three hundred times, or in the ratio of thirty to every hundred, or three in every ten, or very nearly one in every three; so that we may say that every third case of cutaneous disease coming before us is a case of eczema. It is for this reason that we make the study of eczema our first consideration in the investigation of individual diseases, and give it a place to which it becomes entitled, not only on account of the inconvenience and suffering which it occasions, but also, as we have shown, on account of its absolute numerical importance.

Eczema is remarkable for its variety of manifestation. We have already pointed out two of its characters, namely, its eruptive or eczematous, and its pruritic or psoric or scabietic character; but the characters to which we especially allude, are such as belong to the progressive development of the disease. It is sometimes erythematous; sometimes papulous; sometimes vesiculous; sometimes ichorous; sometimes pustulous; and sometimes squamous; or these varieties of manifestation may be more or less blended; or several of the forms may occur separately on the same individual. When a combination of the forms is present, such as redness, papulation, and exudation, we have no hesitation in pronouncing the case to be one of eczema; indeed it may at once be declared that the polymorphic or multiple form constitutes the real diagnosis of eczema. But we frequently meet with cases in which the separate characters above designated, namely, the redness, the papulation, and the pustulation, stand out so distinctly alone, that we are constrained to admit them as independent eruptions, and assign to them separate names, such as pityriasis, lichen, and impetigo. Nevertheless, their alliance with eczema is too manifest to be overlooked; and, while treating them independently in one sense, we at the same time recognize their affinities with eczema, and associate them under the general head of "eczematous affections."

The diseases belonging to the eczematous group, taking their origin in the eczematous diathesis, and constituting the family of eczematous affections, are as follows:—

ECZEMA
PSORIASIS,
PITYRIASIS,
LICHEN,
IMPETIGO,
GUTTA ROSACEA,
SCABIES.

ECZEMA is the manifestation of the disease in its multiple form; PSORIASIS is a chronic and squamous eczema, retaining its pruritic or psoric character in a heightened degree; PITYRIASIS is a squamous eczema erythematosum, the squamæ being fine, like bran, and sometimes it is a sequel of exudative eczema; that which is a psoriasis on the limbs would be regarded as a pityriasis on the scalp. LICHEN is a development of the papulæ of eczema without the other signs of that disease. IMPETIGO is a pustulous lichen, and the pustular element of eczema without the other signs. GUTTA ROSACEA is an eczema of the face, modified by its situation and cause; and SCABIES, also, is an eczema, modified by the nature of its cause.

If we apply our numerical examination to the eczematous affections as a family, instead of to eczema alone, we arrive at the important conclusion, that 526 in 1000, or more than half, of the whole of the cutaneous diseases of the body, are eczematous; and we thereby add double force to our argument as to the importance of eczema, the advantage of regarding it as a substantive disease, of placing it in the front of all other cutaneous affections, and of making it a standard of reference and comparison.

Willan and Bateman, with the view of making eczema conform to their scheme of classification, saw in it only its vesicular and ichorous character; consequently, the eczema of to-day is no longer the eczema of those authors. Of the three hundred cases already referred to, the eczemata admitted by Willan and Bateman would have amounted only to ninety; consequently to one-third of the entire number recognized at the present time.

The eczematous affections constitute a true natural family or group; they resemble each other in their manifestation; in their symptoms; in their cause; and they are amenable to the same general principle of treatment.

ECZEMA.

Syn. *Ecphlysis eczema*, Mason Good; *scabies humida; herpes squamosus madidans; dartre squameuse humide*, Alibert; *dartre vive; dartre erysipelateuse; nässende Flechte; humid tetter or scall; running scall; heat eruption.*

ECZEMA[1] is an inflammation of the skin, accompanied with alteration of its structure and derangement of its functions; the skin is more *vascular*, and consequently redder, than in health, its vessels being in a state of congestion; its *sensibility* is morbidly increased, sometimes taking on the character of itching, tingling, or smarting, and sometimes that of pain; it is *thickened* by infiltration of serum into its tissues, sometimes fissured and sometimes œdematous; it *exudes* a serous lymph, at various times and in various quantity, sometimes in excessive abundance; its cuticle is sometimes raised into *papules*, sometimes into *vesicles*, sometimes wholly removed, and is reproduced unhealthily, so as to form muco-purulent secretions and squamæ of various size; and sometimes the cuticle is replaced by a *crust* of greater or less thickness, resulting from desiccation of the morbid secretions.

In a few words, the characteristic signs of eczema are, redness, itchiness, interstitial and sometimes subcutaneous thickening, exudation, papulation, vesiculation, incrustation, and desquamation.

Eczema has no proper constitutional symptoms belonging to itself; the symptoms which accompany it being such as appertain to the form of constitutional debility, which occupies the place of its predisposing cause. There are three forms of debility which predispose to eczema; namely, nutritive, assimilative, and nervous. In *nutritive debility* the symptoms are chiefly those of deficient nutritive power, with waste of the tissues of the body, a state which gradually passes on to exhaustion and atrophy. In *assimilative debility* the symptoms are such as accompany disorder of the digestive and assimilative functions, and the secretions dependent on those functions. In *nervous debility* the symptoms take their origin in a weakened, irritable, and exhausted nervous system, and are such as would accompany that form of debility irrespective of the cutaneous eruption. The constitutional symptoms of eczema, therefore, are such as result from the presence of the eruption on the skin; either the irritability of the nervous system induced by a painful and itchy disorder, that destroys comfort and sleep, and sometimes gives rise to the wildest paroxysms of suffering; or, the exhaustation of the digestive, assimilative, and nervous powers, occasioned by the drain from the system of an abundant and constant discharge.

---

[1] Plate IX.

It very commonly happens that an attack of eczema is preceded by symptoms of general disturbance of the digestive organs; by a feeling of fulness and oppression at the epigastrium, and by a feverish reaction of a mild type. These symptoms may last for several days, or for several weeks, and they cease immediately that the eruption makes its appearance; but it would be an error to regard them as part of the eruptive disease; for they are occasional only, and not constant, and the same symptoms might precede a temporary diarrhœa, or a cholera, or, in fact, the evolution of a *causa morbi* in whatever shape it may be developed. It would be impossible to determine from such symptoms that an eczema was about to follow; and an eczema is in general produced without any forewarning or premonitory symptoms of any kind.

The relief occasioned to the symptoms of general disturbance just described, by an outbreak of eczema, is due to its *derivative* action simply. And this derivative influence is manifested in a variety of ways; sometimes the eczema takes the place of an inveterate headache; sometimes of a neuralgia; of a rheumatism; of a fit of gout; of a bronchitis; and in fact may supersede any chronic ailment to which the body is liable. The phenomena of derivation suggest to the mind of the uninstructed the idea of the exit, or the expulsion from the body, of some innate evil, and a consequent alarm lest the cure of the eruption may act as a repercussive, and throw back upon the economy the material of disease. And this impression is strengthened by the fact, that, after the sudden and spontaneous disappearance of the eruption, some new malady has immediately sprung up. But the proper way of viewing the case is, to recognize a *causa morbi*, the consequence of debility, and the possibility of the determination of that cause upon any point of the economy, the weakest being the one usually selected. And if there be several weak points, then each may be attacked in succession, or the irritation existing in one may be suddenly transferred to another. Admitting these data, it must be clear, that if we can cure the manifestation in one spot, we relieve it in the whole; because a cure can only be effected by removing the debility which is the real predisposing cause of the disease. We have no reason to fear repercussion; our fear should be, our incapability of mastering the disease; and we neglect our duty when we allow the disease to run on for months and years without attempting a cure, placing our reliance on morbid nature, and hoping, if the patient be an infant, that the cutting of the teeth, or the development of puberty, or menstruation, or manhood, will eventually bring about a cure.

There is another evil in deferring a cure, namely, the setting up in the constitution of a tendency or diathesis. Diathesis is of two kinds, *hereditary* and *accidental*. The latter is the consequence of a protracted continuance of the disease, and in another generation may become hereditary. When a diathesis exists, a patient may be subject to attacks of eczema during his whole life, and every little disturbance of function of the digestive or nervous system will, in place of any other ailment, occasion an eczema.

Eczema is not contagious, although it is often met with pervading a family, or even a community, or assuming an epidemic character, and, like other chronic disorders, it may be more common in certain localities than in others. We have in our memory a case in which a weakly mother nursing an eczematous infant, had eczema on the arm against which the head of the child rested. The discharges from the eruption of the child were the undoubted cause of the eczema in the mother; but this was no proof of contagion; any discharges or any irritant would have caused irritation of the mother's skin, and in her existing state of debility, eczema is just the result that might have been anticipated; even apart from the fact that she might also have been an example of the eczematous diathesis.

Eczema is a chronic affection and has no specific course. Like other chronic inflammations, it has a beginning and an ending; in other words, its rise and its decline, with an intermediate period of activity, of greater or less duration. In a severe case the rise may present redness, heat, swelling, papulation, and sometimes vesiculation: this may be regarded as a first stage or *first period* of the disease. Next, there may succeed exudation, incrustation, and sometimes suppuration; this is a second stage or *second period*, the stage of exaltation. Lastly, there will follow the third stage, the stage or *period of decline*, comprising desquamation, with redness, and often thickening of the skin. These three periods, when they exist, may be termed, the *first*, the erythematous, the papular, and the vesicular period; the *second*, the exudative and incrusted period; and the *last*, the squamous or desquamating period.

But eczema rarely presents all these characters complete, nor do they follow in regular succession; they are modified by constitution, by temperament, and also by situation; and these modifications are the foundation of its varieties. Sometimes redness or vascular congestion of the skin is the dominant character, and the variety an *eczema erythematosum;* sometimes, with the redness, the vascular congestion and serous infiltration of the follicles give rise to pimples, and the resulting variety is an *eczema papulosum;* in a third instance the predominating character may be vesicles, *eczema vesiculosum;* in a fourth, the leading character may be exudation, and the eruption an *eczema ichorosum;* again, there may be pustules, which are commonly of the type termed psydracious pustules, mingled with the other signs of pathological lesion, and the variety is an *eczema pustulosum ;* or, in the most chronic form, the principal feature of the eruption may be desquamation, and the variety, *eczema squamosum.*

These terms comprehend the principal forms of eczema dependent on symptoms; but different terms suggest themselves naturally for other different conditions; for example, the skin is sometimes cracked and fissured, *eczema fissum ;* sometimes the thickening and condensation, in a chronic stage of the affection, suggest the terms *eczema sclerosum* and *eczema verrucosum ;* sometimes the state of the part is aptly expressed by the term *eczema œdematosum ;* sometimes, from the nature of the secretion, *eczema mucosum ;* and more than once we have met with a case, to which, on account of the severe pain by which it was accompanied, the term *eczema neurosum* would be correctly applicable.

It is rare, however, to find an eczema perfectly simple in its eruption, and capable of being represented singly by any one of the terms already mentioned. More frequently two, or indeed, several of the forms may be present at the same time, and sometimes even, the whole. Thus, in one case we may have an erythematous eczema accompanied with papulæ, an *eczema erythematosum et papulosum ;* or, it may be an *eczema erythematosum et ichorosum ;* or, if the exudation of fluid be the chief feature, we might name it *eczema ichorosum,* and in a less degree *erythematosum et papulosum,* or even *pustulosum.* Or the case might be one of *eczema vesiculosum et erythematosum ;* or an *eczema squamosum* (eczema chronicum), which is at the same time, in part *fissum,* and in part *ichorosum.*

Varieties of eczema are also deduced from situation: hence we have eczema capitis, faciei, aurium, palpebrarum, oris et labiorum, axillarum, mamillarum, umbilicale, inguinum, pudendi, perinei, ani, articulorum, manuum et pedum, dorsi manûs, palmare et plantare, digitorum, and unguium. Moreover, we are taught by experience that in certain situations we are likely to meet with one or other of the preceding varieties; for example, eczema capitis et aurium is commonly ichorosum in a recent attack, and squamosum at a later period; eczema articulorum, eczema axillarum, eczema inguinum, and eczema pudendi are very frequently ichorosum, and sometimes mucosum. Eczema of the fleshy parts of the forearms and legs is not unfrequently vesiculosum, as is also eczema digitorum. Eczema dorsi manûs is usually papulosum; while eczema palmare is squamosum, and often, as are the tips and joints of the fingers, fissum.

The extent of the eruption will also come in for a share of consideration in the designation of varieties. The eruption may be *general* or *partial.* When partial, the patches may be single or multiple; they may be defined (figuratum), or diffused (diffusum). Sometimes they suggest the idea of the dimensions and figure of a piece of money (nummulare), and sometimes are bounded by a prominent ridge (marginatum), and spread by the circumference, while the inflammation within the included area subsides.

The classification of Willan as applied to eczema has the effect of aking its different pathological appearances separate diseases; for xample, in its early stage, and in one part of the body, the eruption ight present the characters of an erythema, and be placed in the rder exanthemata; in another stage, or on another part of the body, t would be classed with papulæ; in a third, it would belong to pus-ulæ; in a fourth, to squamæ; and in a fifth only, to the order in which it is placed by Willan, namely, vesiculæ. But in truth, the rarest of all the varieties of eczema is its vesicular form; we have already drawn attention to the not uncommon circumstance of the same cause, namely, the sun's rays, giving rise in different persons to separate forms of eruption. And, it appears to us to be infinitely more philosophical, and certainly practical, to regard such an eruption as three forms of the same disease, namely, as eczema, in the three varieties, erythematosum, papulosum, and vesiculosum, than to treat it as three separate diseases, belonging to different orders, under the names of erythema, lichen, and eczema.

It follows from this mode of viewing eczema, for the suggestion of which we are indebted to Hebra of Vienna, that many varieties of eruption, which by Willan would have been classed in various of his orders, are, at present, considered as forms of eczema. A step had already been taken in that direction by Willan himself, when he named one of his species, eczema impetiginodes; and our own labors for several years past have tended to the development of the same idea.[1]

The varieties, or, as he preferred to name them, species, of eczema admitted by Willan, are three in number; namely, solare, rubrum, and impetiginodes. Eczema solare corresponds with eczema vesiculosum; eczema rubrum with eczema ichorosum; and eczema impetiginodes with eczema pustulosum.

Hardy arranges the varieties of eczema in three groups, having relation to the *appearance*, the *figure*, and the *situation* of the eruption. The first of these consists of eczema simplex, rubrum, fissum (fendillé), and impetiginodes; the second, of eczema figuratum, nummulare, sparsum, and diffusum; the third, of eczema pilare, eczema capitis, and the rest of the local varieties corresponding with our own.

To designate the varieties of eczema, Hebra employs the suggestive terms, squamosum, papulosum (lichenodes), vesiculare (solare), madidans (rubrum), and impetiginosum; he makes eczema squamosum the first of his forms of eczema; whereas we take it to be the last. Eczema erythematosum is commonly accompanied with desquamation; and when the eruption is general, this is remarkably the case. Now, Hebra selects the moment when it is coated over with scales as the type of this form of disease. But it must be remembered that the scales may be disposed of in a variety of ways; there was a time before which they were formed; there is a time when they have eased to be productive; there is an intermediate time when they may e removed artificially by dressings, poultices, or baths. What are we to call the disease when the scales and desquamation are no longer present? The answer is plain; the redness, the erythema remains; indeed, the erythema is always there; from the beginning before the scales existed, at the end, after they exist no more; hence the term "erythematosum" appears to us to be more appropriate than "squamosum." Again, there are forms of eczema in which there is redness, but nothing deserving to be called scales; and, to these cases, which are numerous, the term "erythematosum" is especially applicable.

---

[1] *Vide* an Essay on Eczema Infantile, read at the meeting of the British Medical sociation in 1856.

On the other hand, when eczema reaches its latest period, when it is chronic, there is still redness; but scaliness and desquamation are a more predominant character than redness; and it is to this period, that we prefer to attach the term "squamosum." Eczema squamosum, we regard as the chronic stage of eczema; whilst eczema erythematosum, which may also be chronic, applies with special aptitude to the earliest stage of the eruption. Eczema squamosum is, therefore, in our view of the pathological indications of the disease, an eczema chronicum squamosum, and is the true representative of the much abused term psoriasis. Psora represents the more active, and especially the exudative forms of eczema; and psoriasis its chronic, its dry, and its desquamating form.

In a tabular arrangement, the varieties of eczema admit of being grouped under three heads, in conformity with their pathological characters or their appearance, their distribution, and their locality; the three groups being as follows:—

PATHOLOGICAL FORMS.

(Regular.)

Erythematosum,
Papulosum,
Vesiculosum,
Ichorosum,
Pustulosum,
Squamosum.

(Irregular Forms.)

Fissum,
Sclerosum,
Verrucosum,
Œdematosum,
Mucosum,
Neurosum.

FORMS OF DISTRIBUTION.

Universale,
Figuratum,
Diffusum,
Nummulare,
Marginatum.

LOCAL FORMS.

Capitis,
Faciei,
Aurium,
Palpebrarum,
Oris et labiorum,
Axillarum,
Mamillarum,
Umbilicale,
Inguinum,
Pedendi,
Perinei,
Ani,
Articulorum,
Manum et pedum,
Dorsi manûs,
Palmare et plantare,
Digitorum,
Unguium.

The Romans, who designated eczema by the name of scabies, drew attention to a characteristic distinction between its moist and its dry form, scabies humida and scabies sicca.[1] Our Greek fathers appear to have had the same object in view in employing the words psora and psoriasis; the former term corresponding with scabies humida, the latter with scabies sicca. The distinction is a radical one, and of the first importance in the study of eczema. Eczema siccum, which is represented by eczema erythematosum, eczema papulosum, and eczema squamosum, is specially distinguished by an absence of exudation, or by its presence in a very moderate degree; whereas, eczema humidum, represented by eczema vesiculosum, eczema ichorosum, and eczema pustulosum, is remarkable for the exudation of a serous and sometimes a muco-purulent fluid, often in astonishing quantity, a positive flux. According to our observation, the dry forms of eczema more than double in frequency those of the moist or humid kind; therefore a classification that assumes for eczema a definition dependent on exudation as a pathognomonic sign, must, of a necessity, be incorrect.

A well-marked example of eczema is an open page, upon which we may read, with the utmost distinctness, the pathology of the disease; and anything that may be wanting upon this page is supplied by the examination of a succession of cases. Let us note what such an observation teaches.

In the first place, there is redness; one while, uniform; another while, punctated. The cause of the redness, is congestion of the capillaries and smaller vessels of the skin. When the redness is uniform, the congestion is uniform; when the rednesss is punctated, the vascular plexus of the follicles is also congested. Sometimes the congestion of the vascular rete of the horizontal surface is primarily and chiefly apparent; sometimes the vascular rete of the vertical walls of the follicles is the first to show congestion, and the latest to retain it. When the latter is the case, our patients speak of an eruption under the skin; and we, ourselves, perceive a resemblance to the punctiform congestion of the exanthemata. Another phenomenon follows the congestion of the vessels of the follicles; namely, the erection of their apertures or pores; these latter become raised above the level of the adjacent surface, and constitute small pimples. This is the mode of formation of eczema papulosum.

Occasionally, we have the opportunity of observing another process by which an eczema is developed. There may exist a slight itching of a part of the skin; if the part be carefully examined, a reddish punctum is apparent in the substance of the derma; the finger passed over this punctum discovers a hard granule; this is a congested follicle. If, to relieve the itching, we scratch the part, a papule arises; the head of the papule is torn off; a serous exudation follows, and then a small crust, which covers its summit. But, while the one original papule runs its course, the follicles around participate in the same pathological process, and soon a small patch is formed, which presents all the characters of an eczema: there is an erythematous redness; there is papulation; there is slight exudation, papular at first, but afterwards general; there is incrustation, and there is desquamation.

---

[1] Riolanus terms eczema *scabies humida*; and defines the other division of scabies, namely, *scabies sicca*, as being rough and pimply like goose-skin, in which definition we recognize eczema papulosum vel lichenodes. Scabies sicca, according as it produces small and furfuraceous scales, or larger ones like fish scales, he denominates *psora porrigo* and *psora lepra*. Psora porrigo, therefore, corresponds with the pityriasis of modern nomenclature, and psora lepra with psoriasis.

Congestion, therefore, gives rise to redness; it gives rise, also, to papulation, and to a moderate amount of swelling; but there is another important pathological change which results from congestion, and that is, effusion or transudation. The congested vessels are relieved of their distension by the exudation of the fluid portion of the blood, and this exudation causes thickening and condensation of the substance of the skin. Sometimes the transudation from the vessels occasions œdema (eczema œdematosum); sometimes it is effused beneath the epidermis, at the apertures of the follicles, and produces vesicles (eczema vesiculosum); a continuance of this process causes the separation of the cuticle from the cutis, and the discharge from the latter of a serous lymph (eczema ichorosum). In a different constitution, or in another region of the body, the distension of the tissues of the skin may occasion cracks and fissures (eczema fissum); from which an ichorous discharge may be poured out in greater or less quantity.

There is yet another pathological operation which occurs in the morbid skin, and that is, an alteration in the formation of the epidermis. Where two folds of integument have lain in contact for a while, and where, from the constant presence of heat and moisture, the cuticle has no power of acquiring its natural horny density, but remains soft and cellular, the surface of the derma is red, is denuded of epidermis, and secretes a copious muco-purulent discharge, which is, in reality, an aborted and morbid cuticular substance; a cuticle arrested at its cellular stage, and partly transformed, under the influence of inflammatory action and the low vitality of the part, into a fluid, which is principally mucus, but is mingled with a small proportion of pus. There is no lesion of continuity, or destruction of the epidermis, in this case; the muco-purulent matter is a simple secretion produced at the expense of the epidermis, a morbid conversion of that tissue into a fluid matter, which performs the same office to the otherwise unprotected derma, as that of mucus to the mucous membrane. This is intertrigo mucofluens; or, more properly, eczema mucosum.

Now, in ordinary eczema, a morbid alteration in the formation of the cuticular tissue takes place, similar to that just described. The copious exudation of eczema ichorosum is not merely a serous fluid expelled from the vessels in consequence of the over-distension of their parietes; it is a positive secretion in which the cellular elements of the cuticle take an active part, and bestow upon the fluid its special properties; for example, its density, vicosity, and frequent opalescent appearance. That same influence which causes the discharge of such immense quantities of fluid from the mucous membrane of the bowels in diarrhœa and cholera, is also active in eczema ichorosum. In the course of a few hours, several pints of fluid may be poured out from the denuded surface of the derma, partly, no doubt, by way of excretion, but not less actively also by way of secretion.

The pathological phenomena present and in operation in eczema, therefore, are not simply those of inflammation, but also involve a morbid aberration of secretion. The inflamed derma, which, at an early period of the disease, exudes largely a colorless lymph, at a later period may exude an opalescent and even a yellowish fluid; the consequence of the conversion of the mucous elements of the cuticle into pus. And the continuance of inflammation of the skin may so far lower the vitality of the surrounding tissues, that pustules may be developed around the circumference of the patch of eruption, and add fresh purulent matter to the morbid secretion; the case is, then, one of eczema pustulosum, or eczema impetiginodes.

In a disease of a secreting tissue, where inflammation is apt to continue for a considerable period, and where secretion is so greatly disturbed; where exudation takes place as the result of inflammatory changes, and as the result also of modified secretion, we may expect to find crusts of various kinds formed on the inflamed surface; some resulting from the desiccation of altered secretions, and some from imperfect formation and altered structure of the epidermis. It is in the power of the medical man to prevent these crusts from appearing at all; but where the case has been left to itself, or where the treatment has been misdirected, we may find spongy crusts of a grayish, yellowish, greenish, or brownish tint, or almost black; we may find them loose or adherent; we may find scabs of various degrees of density; or we may find, where alteration of the epidermis is chiefly concerned, scales of various thickness and magnitude, thicker, larger, and rougher in more recent cases; thinner and smaller in more chronic forms; and diminishing by degrees to the furfuraceous and farinaceous desquamation of psoriasis and pityriasis.

REGULAR FORMS OF ECZEMA.

ECZEMA ERYTHEMATOSUM is recognized by redness, thickening and hardening of the skin from infiltration of serum into its tissues, itching, and successive desquamation of the cuticle in laminæ or scales.

When this form of eczema is associated with other forms of the eruption, or when the patient has previously suffered from eczema and has a tendency to eczema, in other words, an eczematous diathesis, the diagonosis of eczema erythematosum is plain; but if it be a first attack, and is slight in its nature, like the instance we have already given as resulting from sunburn, it may be difficult to distinguish it from simple erythema. If, as is commonly the case, it is accompanied with papulæ, and gives out a serous moisture or exudation on rubbing or scratching, the case is an undoubted eczema erythematosum.

Eczema erythematosum is apt to occur upon the eyelids, behind the ears, about the pudendum, and, generally, in the flexures of the joints. It is the form which erythema in an eczematous constitution would naturally assume. From its proneness, in the latter stage, to perpetuate itself by desquamation, a tendency of all the forms, Hebra names it squamosum; but we prefer to distinguish the congestion of the early stage and slighter forms of eczema by the term erythematosum; reserving the term squamosum for the latter stage and more chronic and severer forms.

ECZEMA PAPULOSUM.—The association of papulæ with eczema is one of the commonest of its phenomena; sometimes they enter into the composition of the eczematous blotches; sometimes they are found in the circumference around them, or dispersed more or less abundantly over the body and limbs, while eczema ichorosum holds sway in other parts; it is, however, the predominance of papulæ over the other pathological forms which especially characterizes eczema papulosum. In universal eczema, and in eczema infantile, which is frequently universal also, the papulous element of the eruption is very conspicuous; but it is nowhere more so than in the combined ichorous and papular eruption that takes possession of the back of the hands, the lichen agrius of Willan, which, in other words, is an eczema lichenosum, or lichen eczematosus, or, more properly, an eczema papulosum et ichorosum.

ECZEMA VESICULOSUM[1] (eczema solare of Willan) is the rarest of the forms of eczema, although the type of the vesicular eruptions. It is most characteristically seen on the back of the hands of persons of lymphatic temperament who have been exposed to the heat of the sun's rays; and then presents itself as a confluent crop of minute vesicles corresponding with the pores of the follicles of the skin, and attended with more or less œdema of the subcutaneous cellular tissue, and interstitial infiltration of the skin itself. Another common situation of its outbreak is the fingers, especially their palmar surface. From the thickness of the cuticle in this situation, the vesicles are indistinct, and the serous fluid collects beneath it in minute beads, and pushes up the cuticle in plates of considerable extent, hollowed upon the under surface into vesicular cavities. In this manner the cuticle may be raised off the greater part of the circumference of the fingers.

In the course of a few days, the serum of the vesicles is absorbed; the œdema of the corium and subcutaneous cellular tissue subsides, the cuticle dries and exfoliates, and the skin returns to its normal condition. Not unfrequently, however, the newly-formed cuticle is produced unhealthily, and is thrown off by desquamation in furfuraceous scales.

ECZEMA ICHOROSUM (eczema rubrum, Willan; eczema madidans, Hebra) is characterized by intense redness, denudation of the inflamed surface, more or less thickening from infiltration of tissue, and exudation of a colorless ichor or lymph, often in abundance, and sufficient to justify the term "madidans" applied to it by Hebra. Eczema ichorosum may commence as an erythematous or as a vesicular form, and pass on to the more exalted stage of exudative activity implied by the term ichorosum. Or, an ichorous exacerbation may break out at any period of the course of a chronic eczema, and recur from time to time during its existence.

The ichorous discharge is not simply the effusion of serum from the congested vessels and tissues, but it is also an altered secretion of the skin itself; and the unformed elements of the epidermis mingling with the ichorous discharge, give it an opaque and mucous, and sometimes a muco-purulent character. The discharge is tenacious, often viscous, and forms, on desiccation, a yellowish or grayish, and more or less brittle and spongy crust, which adheres firmly to the inflamed corium, and sometimes attains to considerable thickness. Not unfrequently, at this stage of the eruption, the crust breaks up into plates of various size, and the muco-purulent secretion oozes up through the fissures. This is peculiarly the case, on the scalp and on the face; on the scalp because the crust is mechanically detained by the hair; on the face, because, from the difficulty of covering it up, evaporation and desiccation are more active than in other parts.

---

[1] Portraits of Diseases of the Skin, Plate III., X.

Eczema ichorosum, therefore, presents three characters, which in it are more strikingly developed than in the other forms of eczema; namely, the redness of the inflamed corium, the copious exudation, and the consequent formation of an extensive and thickened crust. It must be borne in mind, that the exudation is not the result of ulceration, as might sometimes be supposed from its muco-purulent character, but is chiefly derived from secretion. Indeed, in one form of eczema, namely, eczema intertrigo, there is often a copious muco-purulent secretion from the surface of the unbroken skin, with no other pathological change than erythema in a moderate degree.

The ichorous form of eczema is most commonly met with in the joints, as in the axilla, the elbow, the groin, and the ham; upon and behind the ears; on the face; around the nipples; about the umbilicus; and in the pudendal region. A characteristic form of the eruption in the latter region, and extending for a short distance down, upon the upper and inner part of the thighs, is well described by Willan under the head of eczema rubrum.

ECZEMA PUSTULOSUM (eczema impetiginodes, Willan) is a more or less confluent eruption of small psydracious pustules, accompanying any of the forms of eczema, but most frequently associated with eczema ichorosum. The pustular eruption must be regarded as an aggravation of the ichorous form of the disease, and is most commonly met with in regions exposed to an excessive degree of irritation, as the face and hands; in young persons of irritable temperament; or in persons considerably reduced in strength.

ECZEMA SQUAMOSUM represents the last period of the other forms of eczema, when the pimples have subsided, the exudation has ceased, and only the redness, the thickening from interstitial infiltration, and the desquamation, remain; the desquamation no longer presenting the character of exfoliation, as in eczema erythematosum and papulosum, nor crusts, as in eczema ichorosum and pustulosum; but of small thin scales, for the most part furfuraceous, or even farinaceous. Eczema may from the first present these characters, and in them, that is in the redness, thickening, itching, and desquamation in small scales, we recognize *psoriasis*, the sequence of psora; and, where the thickening of the skin is less, and the scales thinner and finer, *pityriasis*; the whole of these forms belonging, in fact, to the chronic period of eczema.

IRREGULAR FORMS OF ECZEMA.

ECZEMA FISSUM.—When the skin has been subjected for some time to inflammatory congestion, and has become thickened and condensed by infiltration into its tissues, it chaps and cracks with extraordinary ease; the mere stretching of the fingers will cause the skin to break; and a new pathological element is added to those previously noted in connection with the disorder. Eczema fissum is a common associate of eczema squamosum, and is most frequently met with where the skin is naturally the thinnest, the hardest, and the densest; for example, the tips of the fingers, the joints of the fingers, the palm of the hand, the dorsum of the hand, and the wrists; but it may exist in the concavities or upon the convexities of all the joints, or at the bottom of folds in any part of the skin; for example, in the angle of attachment of the ear to the side of the head, the nose to the face, or at the angles of the eyelids or mouth.

Eczema squamosum of the palms of the hands, or psoriasis palmaris eczematosa, is remarkable for the number and depth of its fissures; and, in eczema infantile, and chronic eczema in children, the fingers have sometimes the appearance of being almost severed through at the joints.

ECZEMA SCLEROSUM.—When chronic eczema has existed for a considerable time on some part of the limbs, the skin is apt to acquire the hardness and toughness of leather; such patches are usually circumscribed in form, are somewhat elevated above the surface, attended with occasional fits of severe itching, and throw off a dry and scaly scurf. They are commonly designated psoriasis, and are sometimes so like patches of diffused alphos, as to be liable to be mistaken for that eruption. When scratched or rubbed, they give forth a serous exudation.

ECZEMA VERRUCOSUM is an aggravated form of eczema sclerosum; harder, harsher, and more prominent; rough on the surface, and resembling the summit of an old fibrous wart. This latter appearance seems due to hypertrophy of the papillæ in conjunction with general thickening of the skin. The pruritus of eczema verrucosum is sometimes unusually severe and troublesome, particularly in elderly persons. The verrucous patches are commonly of small size, and more or less numerously dispersed over the limbs, commonly the lower extremities.

ECZEMA ŒDEMATOSUM.—Serous effusion and serous infiltration are common symptoms of eczema, particularly in lymphatic subjects; hence an œdematous state of cutaneous and subcutaneous tissues is a not infrequent occurrence. It is important only in a therapeutical point of view, for the eruption rarely heals until the excess of serum in the tissues is dispersed.

ECZEMA MUCOSUM (INTERTRIGO).—Eczema sometimes presents itself as a mucous discharge, occurring between folds of the skin in infants or fat persons; and sometimes also in the axillæ, around the nipples, in the hollow of the umbilicus, in the groins, about the anus, and in the perineum. The mucous character is given to the secretion by the intermixture, with the serous exudation, of the newly formed material of the epidermis. A predisposition to exudative eczema of the mucous character is not unfrequently met with, without being followed by eruption; in this case, the surface is itchy, but without redness, and when rubbed becomes moistened with a viscous secretion having a strongly acid smell. This condition of the skin is commonly experienced on the scrotum and in the perineum, but may occur on any part of the body, and especially in the joints.

ECZEMA NEUROSUM.—We have given this name to a very distressing association of neuralgia of the cutaneous nerves with eczema. The most painful case that we remember was one in which the pain occupied the axillæ; and, from its severity, weakened the nervous tone of an already weak heart. The patient was of Asiatic origin and highly irritable temperament.

FORMS OF DISTRIBUTION OF ECZEMA.

Eczema is rarely so general in its attack as to affect the entire body; but such cases are occasionally seen in the adult, and more frequently in the infant.

More commonly, eczema occurs in patches of limited extent, and usually of a rounded or oval form, *eczema figuratum;* but at other times is diffused, *eczema diffusum,* over a considerable part of the body, as of the limbs, or a portion of the trunk.

Its occurrence in small circular blotches, that in size and form have suggested the idea of pieces of money, *eczema nummulare,* is not very rare. But a rarer form, is one which we have named *eczema marginatum,* from the presence of an abrupt ridge which bounds it on all sides, and remains active and irritable when the skin within its area is in great measure restored to its natural state. The common seat of eczema marginatum is the perineum, and the boundary-line extends for a short distance down the thighs in front, and upon the buttocks behind. We have met with this form of eruption chiefly in officers who have returned from India or China for their health, and sometimes it has been associated with circular rings or marginate blotches on other parts of the skin. The eruption is excessively itchy and very obstinate, and the patients have usually spoken of it as a disease common in the East, and considered to be a kind of ringworm. A gentleman lately under our care became attacked with it in Burmah, and called it the Burmese ringworm; it originated, he said, from the moist heat of the climate, combined with the habit of frequent bathing. Another patient called it the Concanee itch, and said that it was common in the Concanee district; while a third termed it the Hong Kong ringworm.

LOCAL FORMS OF ECZEMA.

THE LOCAL FORMS of eczema derive their chief interest from the existence of conditions favoring the development and permanence of the disease in the localities attacked, and also from the complications that are consequent on their position. Sometimes the complication is due to the *structure of the part,* as in eczema capitis, where the hair is a source of much inconvenience. Sometimes the aggravation proceeds from the unavoidable operation of *irritants* upon the diseased organ; for example, the atmosphere, in eczema faciei, aurium, et manuum; heat, moisture, and friction, in eczema axillarum, umbilicale, inguinum, pudendi, perinei, and ani; friction, and, during lactation, moisture, in eczema mamillarum; and motion, in eczema oris, labiorum, and articulorum.

ECZEMA CAPITIS.[1]—The forms of eruption common to the scalp are, eczema ichorosum, pustulosum, and squamosum. In eczema ichorosum the hair becomes matted and stiff, a thick casing composed of desiccated crusts and matted hair is formed upon the head, and, beneath this matted case, is a profusion of a tenacious and colorless, and sometimes, a muco-purulent exudation (tinea mucosa.) The disease gives out a disagreeable odor, which may be compared to putrid straw, and if a portion of the crust be raised, the skin beneath is seen to be vividly red, and excoriated to a greater or less extent. There are never any vesicles or papules on the scalp; but around the circumference, on the forehead, the temples, and the neck, there is redness, eczema erythematosum; often papulæ, eczema papulosum; and desquamation, eczema squamosum.

The transition of eczema ichorosum into eczema pustulosum is simple enough; psydracious pustules are developed on any part of the scalp where the cuticle is unbroken, and particularly in the circumference of the disease; and the originally ichorous and limpid exudation passes quickly into the puriform state.

When the ichorous secretion is poured out in large quantity, it dries upon and amongst the hair, frequently drawing it together in little bundles, and inclosing the little bundles and separate hairs in a thin transparent membranous sheath; and when the hair has been cut short, the bundles taper to a point like a camel's hair brush, and give rise to a peculiar and remarkable appearance.[2] The hairs, covered with these white films, have a striking resemblance to asbestos, and suggested to Alibert the terms *teigne amientacea*, and *porrigo asbestina*, by which he has designated this form of eczema capitis; if, however, a specific name were given to it, it would be more correct to term it eczema amiantaceum.

At a later period of the complaint, when the morbid secretions have diminished in quantity, the crust which is produced, is of a dull gray color, and more friable than the crust previously described. This grayish crust, broken into fragments, or rather into *granules*, and dispersed among the hair, has been compared to particles of mortar, and suggested the term *tinea granulata*. Sometimes these little masses or granules, being pierced by the hairs, have the appearance of being threaded on them like beads upon a string.

When eczema capitis has exhausted its secreting power and much of its activity, the scalp is left red, rough, thickened, itchy, and scaly; this is eczema squamosum; this also is the state, the exhausted psora, to which the term psoriasis is correctly applicable; the psora that is no longer humid and weeping (psora humida), but the dry psora (psora sicca). Psoriasis signifies the dry and prurient condition of the eruption, and not the scaliness, which is a consequence of the inflammation. The scaliness of eczema or psora is expressed by the term pityriasis, which also indicates the kind of scales, thin, fine, and bran-like, in a word, furfuraceous. These terms, therefore, represent three stages or forms of eczema; firstly, the moist and active stage, or psora; secondly, the dry and indurated stage, or psoriasis; and thirdly, the squamous stage, or pityriasis.

---

[1] Synonyms: *Erythema ichorosum; tinea mucosa, amientacea, furfuracea, granulata; porrigo furfuracea, asbestina; dartre squameuse humide; running scall.*

[2] Portraits of diseases of the skin; *vide* eczema capitis.

Much of the complexity attaching to the nomenclature of cutaneous diseases arises from the mingling of the Greek and Roman names, and the misconception of their true meaning. We have endeavored to show that the vulgar name of the disease before us was *eczema*, or rather *eczemata*, for the Greeks spoke of it in the plural number; and that another popular synonym of eczema was *psora;* that psora in its tamed, or exhausted, or chronic state, was known by two names, *psoriasis* and *pityriasis;* psoriasis being intended to distinguish its itchy state, and pityriasis its squamous state. Moreover, it must be mentioned, for the more full understanding of these terms, that pityriasis was limited in its application to the scalp, while on any other part of the body the disease was called psoriasis. The Romans rendered the words psoriasis and pityriasis by their own term, *porrigo* (à porro, quia ut porrum in tunicæ involucra, ita cutis velut in squamas resolvitur); but its proper synonym is pityriasis. Pityriasis and porrigo must therefore be regarded as synonymous, the former being the Greek, the latter the Roman term, for the same form of disease.

It must also be mentioned in connection with eczema capitis that the lymphatic glands of the head and neck, and particularly the mastoid and occipital glands, are apt to enlarge and become painful, and sometimes to become involved in suppuration.

ECZEMA FACIEI.—Eczema in all its varieties may appear on the face; in its more active forms it occurs chiefly in infants and young persons; in its more chronic forms in adults. Eczema erythematosum and papulosum combined are common to infants, and have received the name of *strophulus*, or tooth-rash; and the same forms are sometimes seen in the face of debilitated persons, and especially women, and are distinguished by the appellation of *gutta rosacea.*

Eczema ichorosum of the face, as it occurs in infants, gives rise to the formation of the crust known as *crusta lactea*, and is very apt to degenerate into eczema pustulosum (eczema impetiginodes), and not unfrequently, the pyogenic tendency being in excess, the case has the character of a true impetigo.[1] The crusts vary in degree of thickness, porosity, and color; sometimes they are gray or brownish, sometimes yellow or amber-colored, and sometimes, from admixture with blood, almost black. The yellow and amber-tinted crusts suggested to Alibert the euphonious appellation, melitagra. Of the chronic forms of eczema of the face, none is more obstinate than that which attacks the nose in adults.

---

[1] *Vide* Portraits of diseases of the skin; the plate marked *impetigo faciei* is of this kind; and, adopting our present nomenclature, should be termed eczema pustulosum.

ECZEMA AURIUM.—Eczema of the ears is either ichorous, pustulous, or squamous. In the former the pinna is very much swollen, the meatus is obstructed by the swelling, and the limpid ichor is seen to distil from the follicles in separate drops, and often with a rapidity that reminds us of a spring. The exudation quickly dries up into yellow crusts, under which, accumulations of lymph or muco-purulent fluids are detained. The inflammation occupies both surfaces of the pinna, and spreads more or less extensively to the side of the head. In its squamous form the eczema is very obstinate; it occupies chiefly the fissure behind the ear; the secretions are dried up; but the skin is red and thickened, scaly, and often cracked.

ECZEMA PALPEBRARUM.—On the eyelids eczema is usually met with in the erythematous and squamous form; but sometimes also, in young persons, has the ichorous and pustulous character, and is associated with conjunctivitis. This latter constitutes the disease termed *psorophthalmia.* When attended with œdematous swelling, and much surrounding inflammation, eczema palpebrarum may be mistaken for erysipelas.

ECZEMA ORIS ET LABIORUM.—A squamous and fissured form of eczema is not unfrequently met with around the mouth and upon the lips of young persons. The eruption is unsightly and troublesome, and often, from the extension of the cracks, very painful, and is slow and obstinate under treatment. As a necessity, where there exist cracks and fissures (rhagades), the skin is more or less thickened and condensed by serous infiltration.

ECZEMA AXILLARUM is commonly of the ichorous kind, and sometimes erythematous. The ichorous exudation is due to the heat and moisture, and somewhat to the friction of the part; and the debility of the skin and the continuance of the irritation commonly give rise to enlargement of the superficial lymphatic glands, and not unfrequently to furunculi and cutaneous abscesses. Whenever eczema attacks the body generally, in adults, the axillæ invariably participate in the disease. Such an affection is not unfrequently met with as a consequence of the exhaustion of the puerperal state, or of prolonged lactation; and is sometimes accompanied with cutaneous neuralgia.

ECZEMA MAMILLARUM is a painful, and often an obstinate complaint. It is usually ichorous, pustulous, not unfrequently squamous, and deeply chapped and fissured. It is most painful and most intractable when it occurs during lactation.

ECZEMA UMBILICALE ET INGUINUM belongs to the kind of eruption which results from the heat and moisture and friction which are the inseparable consequences of the apposition of folds of the skin, as in natural depressions like the umbilicus; in the fold between the mamma and the waist; the thick folds of the neck and abdomen in fat persons and infants; the fissure between the buttocks, or, between the thighs and the scrotum or labia majora. This form of the eruption is usually termed *intertrigo;* it is sometimes erythematous, sometimes ichorous, and sometimes squamous. When ichorous, the exudation s apt to assume the mucous or muco-purulent character, and continue s a morbid secretion for a considerable length of time; or the ichorous alternates with the squamous form for a long period. In the squamous variety there are often cracks or rhagades of considerable depth and extent.

Eczema pudendi, perinei, et ani.—Eczema is especially a pruritic affection; but the itching is nowhere more strongly manifested than in the region of the pudendum, perineum, and anus, both in the male and in the female. In other respects it does not differ from the eruption in other situations, except perhaps in endurance; for it is in no situation more lasting and obstinate. In the deepest hollows there is always a moist secretion, and in the cleft between the scrotum and the thighs, and around the anus, there are frequently painful rhagades or fissures.

The scrotum is peculiarly subject to itching; it is apt to be much torn by the nails, and that which before was a mere pruritus of the skin is rapidly converted into an erythematous and ichorous surface, tender, painful, and thickened.

Eczema not unfrequently attacks also the deep furrows of the folds of the prepuce, and assumes a chronic character. It is erythematous, dry, squamous, and fissured; the skin being indurated and thickened. and apt to contract around the glans, and occasion phimosis. It is also met with similarly situated upon the mucous covering of the clitoris.

Eczema articulorum.—The thin skin of the flexure of joints is especially susceptible of eczema, and in an eczematous diathesis the eruption will always be found there, although it may be absent in other parts. It is commonly either ichorous or squamous, is accompanied with rhagades and fissures, and frequently bleeds during the movements of the limbs.

Eczema manuum et pedum.—Eczema is always more inveterate and obstinate at the extremities of the body than elsewhere, and is more frequently met with in the hands, which are exposed to the action of irritants of various kinds, than in the feet, which are sheltered from similar causes. A form of eczema, of the squamous and fissured kind, and produced under the influence of the irritation of the wash-tub, was called by Willan the *washerwoman's itch;* a similar form of eruption, induced by dust and lime, he called the *bricklayer's itch.* The same eruption existing in the grocer and in the baker, were, respectively, the *grocer's itch* and the *baker's itch.* The erythema of the wrists and back of the hands which comes on in cold weather, and after a while becomes chapped and scaly, the so-called *chapped hands,* is, in its latter stage, a chronic eczema, an eczema squamosum et fissum.

The influence of the sun's rays upon the back of the hands has already been mentioned; and the illustration is an interesting one, inasmuch as it is that which suggested to the mind of Willan his definition of a vesicular eruption. But, as we have already seen, it is also the best illustration that can be adduced for the purpose of showing the faultiness of his system. The same cause, namely, the sun's rays, which in one case will produce an eczema solare, will in another occasion only an erythema solare, and in a third a lichen solaris; and, as it would be unphilosophical to admit in these different appearances three separate diseases, we are constrained to embrace the whole under the more appropriate designation of eczema; namely, eczema erythematosum, papulosum, and vesiculosum. In this form of eruption, there is another element present that must be noted: in eczema erythematosum there is probably no swelling; in eczema papulosum there is a little swelling; but in eczema vesiculosum there is swelling to the extent of œdema, because the latter variety of eruption is most apt to occur in a lymphatic constitution, in which there is an excess of serous fluids, and consequently all the material necessary for an effusive or exudative eruption.

ECZEMA DORSI MANUS.—Eczematous eruption of the back of the hands is generally circular in its form, eczema figuratum, and presents itself either as a cluster of pimples with exudative summits (lichen agrius, Willan,) or as a red, dry, thickened, and uneven patch, that is commonly termed psoriasis. The patches are very itchy, and on being rubbed, exude a quantity of serous lymph; sometimes in the squamous stage they are more or less chapped; and sometimes pour out a little blood as well as lymph. Occasionally, these patches extend to the knuckles, and are accompanied with cracks which are painful and difficult to cure.

ECZEMA PALMARE ET PLANTARE.—In the palm of the hand the eczema squamosum constitutes one of two forms of psoriasis palmaris which it is important to distinguish; the other being a syphilitic affection. The eczema palmare presents the usual characters of the squamous form of the disease; its dryness, its scaliness, the thickening and hardening and contraction of the skin, and its long and deep cracks in the lines of motion. The contraction of the skin is often so great that rupture seems to be its only relief; and we are led to feel that, painful as is the alternative, the previous state must have been far less endurable. Eczema plantare is less frequent than the palmar form, on account of the protection which is afforded to the feet by their customary coverings.

ECZEMA DIGITORUM ET UNGUIUM.—Eczema on the fingers sometimes assumes the vesicular form, but more frequently is squamous, and accompanied with rhagades or cracks, which one while take the direction of the wrinkles of the joints, and another while cross longitudinally the tips of the fingers. The thick cuticle of the palmar surface of the fingers is generally raised in laminæ, through which dark globules indicating the effused lymph are seen; but on the sides and back of the fingers true vesicles are produced; and in the thin skin of the clefts of the fingers the vesicles have a conical instead of the semi-globular form.

When the eczematous inflammation extends to the walls of the nails, the secretion of the nails is interrupted, they become discolored, brittle, ragged, and uneven, and take on a morbid character; this is eczema unguium. Eczema unguium is very commonly accompanied with a and swollen state of the walls of the nail, particularly the posterior ll, and is often throbbing and painful.

ECZEMA INFANTILE.

Infants at the breast and young children are peculiarly subject to zema, and in them it is apt to assume the severest form presented by ntaneous disease. In young infants it commences at the end of the irst month or six weeks, and, unless submitted to proper treatment, will continue for months and years; in fact, lay the foundation of a cutaneous disease which may be prolonged in a chronic form until manhood, or may hang about the patient for the remainder of his days.

Eczema infantile originates for the most part in mal-assimilation, and, with good reason, is commonly ascribed to a faulty secretion of milk on the part of the mother or to the faulty diet; but when once established, is not remedied, as might be expected, by the withdrawal of the cause and the substitution of a different and less objectionable food. Unsuccessful attempts to cure the disease, probably, carry the child on to the period of cutting the teeth; then the continuance of the disease is attributed to dentition, this time without so good reason, and hopes are raised that when the milk teeth are perfected the disease will subside. The milk teeth are all cut, but still the eczema lingers, and then a new expectation is raised that when puberty arrives, then certainly the disease will go; but puberty possesses as little of the physician's art as change of food, or completed primary dentition; and so the malady becomes perpetuated.

It is remarkable how trivial an exciting cause may become the origin of this distressing malady. A lady, six weeks after her confinement, travelled by the railroad from London to the sea-coast, carrying with her her infant. She was chilled by the journey, was feverish during the night; her infant was feverish the following day, and threw out an eruption of eczema, which brought the child under our care some months afterwards. This day, a neighbor brought us her infant covered with eczema from head to foot; the child was a few months old; in her confinement the mother had lost her husband under painful circumstances; the distress caused by this affliction was transmitted to the offspring as an eczema. How small the cause of mal assimilation in these cases; and yet they may be taken as the type of the whole family; how easily is the assimilative function of infants disturbed; how difficult often to restore.

When cutaneous eruption attacks an infant under these circumstances, it revels in all the typical and modified forms of eczematous disease. At the same moment, and on the same child, may be seen erythema, lichen, strophulus, impetigo, pityriasis, and psoriasis, and an observant nurse seems to take a special delight in pointing out the various forms of disease which pervade the flesh of the poor little sufferer. In certain parts of the body eczema erythematosum is apt to prevail; but a broken or cracked state of the skin, with however small a degree of ichorous oozing, must determine the case to be an eczema ichorosum. On the back eczema papulosum or lichenodes is apt to predominate; on the head, in the bends of the joints, and on the pudendum, eczema ichorosum; and on the cheeks and ears, eczema pustulosum, vel impetiginoides.

The predominance of one or other of the typical forms of eczema is determined by the condition and temperament of the infant. The child may present every shade of variation of appearance from a state difficult to distinguish from complete health to one in which the poor thing is attenuated and shrivelled up, and looks like a little old man. In the former extreme, however ruddy and full the child may seem, there is evidence of an existing weakness, in the softness of its muscles; but, with that exception, no trace of disorder of constitutional health can be discovered. Next to softness of muscles comes pallor in a slight degree, then an increasing whiteness of the eye, attributable to progressive anæmia; then follows emaciation; the skin shows signs of wrinkles, becomes dry and discolored, and ultimately cacotrophic. With these, the outward signs of the disease, of mal-assimilation in fact, there is rarely any disturbance, or but little, of the digestive organs; the child takes its food well, and is not particularly restless or fretful. Sometimes the motions are green; sometimes mingled with an excess of mucus, and sometimes white from suspended biliary secretion; but there is nothing beyond the commonest gastro-intestinal derangement, and that in a very insignificant degree.

The eruption usually commences as a patch or blotch of slightly raised pimples; the patch is itchy, is rubbed, increases in size, becomes more inflamed, the cuticle is raised in more or less defined vesicles, which are usually broken by friction, the surface becomes excoriated, somewhat swollen, and pours out an ichorous secretion, varying from a mere oozing to an excess that wets through everything that is applied to it. With increase of irritation, consequent on the excessive secretion and the congestion which gives rise to it, the patch spreads; where the eruption commenced by several blotches, they probably run into one; the ichorous discharge also adds to the local disease, by irritating the parts over which it flows. The case up to this time is one of eczema erythematosum and papulosum. The state of eczema vesiculosum has hardly existed, and is only to be seen occasionally; but the disease still runs on, its violence increases, and the morbid secretion, from being a transparent and colorless ichor, like water in appearance, eczema ichorosum, becomes slightly opaque and milky, eczema mucosum, then yellowish and semipurulent, and the case is transformed into eczema pustulosum vel impetiginodes; or the discharge may take on a still more decidedly purulent character, while small pustules are developed on the red and tumefied skin around the patch, as in impetigo. Thus the plus or minus of these pathological conditions, irrespective of the cause or essential nature of the disease; in other words, the disease being the same, it may, according to the temperament or constitution of the child, be an eczema erythematosum, an eczema papulosum, an eczema vesiculosum, or eczema pustulosum vel impetiginodes. Again, as we have before said, whatever the predominating character may be, whether erythema, lichen, or impetigo, there will always be present in a greater or less degree, some, or the whole of the other forms sprinkled over the body; an erythema here, an erythema with strophulus or lichen there, a few scattered vesicles in a third place; or a few congregated psydracious pustules in a fourth.

In this description of the general characters of eczema infantile, we suppose the eruption to be comparatively undisturbed; but that is rarely the case, the great heat, the prickling, the tingling, the intense itching which accompany the disease, render abstinence from rubbing and scratching impossible; hence these have to be added to the causes of aggravation of the local disorder. Again, the burning heat of the skin on the one hand, and exposure to the atmosphere on the other, tend to desiccate the surface very rapidly, the contents of the vesicles dry up into a thin, transparent, amber-colored crust; in eczema ichorosum, with a more copious discharge, the crust is less transparent and thicker; and in eczema impetiginodes, from the desiccated matter being pus, it is thickest of all, and has the appearance of dried honey; *melitagra.* As may be supposed, the crust presents considerable variety of appearance, according to the prevalence of accidental circumstances in a greater or less degree, such as, accumulation of secretion, amount of desiccation, &c. Not unfrequently, as a consequence of pressure or friction, blood is mingled with the discharges, and the crusts become colored of various hues, from a lightish brown to positive black. Again, a variety of color results from the age of the crust, that which has been longest formed being usually lighter than the rest; and another difference occurs, when the original crust is broken, and a new discharge issues from between the severed fragments.

Sometimes this tormenting disease attacks the whole body of the child, and the little thing has scarcely a patch of sound skin on its entire surface, being covered from head to foot with erythema, excoriations, and scabs of every variety of size and dimensions, and giving out an offensive valerianic odor which has been compared to the urine of cats; but more frequently, it is limited to one or more regions of the body, the commonest seats of the eruption being, the head and face, the front of the chest, the umbilicus, the pudendal region, and the flexure of the joints. On the head, the eruption is complicated by the presence of hair, which entangles the discharges, and the crusts are apt to form, in consequence, of considerable thickness, sometimes including the entire scalp in a thick, rugged, yellowish, and discolored cap. At other times, when the discharge is less abundant, it dries up into a friable crust, which, broken into small fragments by scratching and rubbing, has been compared to particles of mortar dispersed among the hair, and has received the name of *tinea,* or more properly *porrigo granulata.* Many of these particles of crust being pierced by the hairs, have the appearance of a string of rude beads. Later in the history of the eruption, and when it has become decidedly chronic, when erythema of the scalp with copious furfuraceous desquamation are the leading characters of the disease, it has been termed *tinea* or *porrigo furfuracea;* and later still, when, with a slighter degree of

thema, the epidermal exfoliation is finely furfuraceous or mealy,
case is one of *pityriasis capitis.*

Vhen the ears are attacked they become much swollen, and give
:h an excessive quantity of ichorous secretion, which may be seen
:illing from the pores of the skin, and standing in drops on the
amed and excoriated surface. When the disease fixes on the face
s also attended with swelling, and often gives the child a bloated
l frightful appearance, every feature being distorted; and the
ormity is increased by the production of a thick discolored scab,
ich forms a mask sometimes to the entire face. This huge, unnatu-
mask covering the child's face, suggested the term *larvalis,* given
ne of his species of porrigo by Willan; only that, instead of por-
larvalis, it should have been *eczema larvale,* or impetigo larvalis.
ain, from occurring at the milk period of life, this extraordinary
st, whether arising from the desiccated secretions of eczema icho-
um or eczema impetignodes, has received the name of milk-crust,
rusta lactea.

he inflammation of the scalp and face is apt to produce, as one o
secondary effects, enlargement, and sometimes suppuration of th
phatic glands. Thus we find the gland situated behind th
na, the occipital, the submental, and cervical lymphatic glan
llen and painful; and not unfrequently, in a pyogenic diathes
re are superficial abscesses in the neighborhood of these glands.

he pudendal region, both in the male and female infant, is n
ommonly the seat of the eruption, being determined to that regi
tly by the heat and moisture resulting from its function, and part
the thinness and sensitiveness of the skin.

or the latter reason it is commonly met with in the flexure of t
ows and knees, and sometimes in the axillæ. In the flexure of t
ts, the inflamed skin is apt to crack into fissures of considera
gth and depth, and often to bleed; the blood mingling with t
essive ichorous secretion poured out by the denuded skin.

he general character of eczema infantile is to form patches of c
rable size, several inches square, and to attack a whole region
e, such as the head, face, &c.; but in addition to this, and someti
hout these extensive patches, the eruption appears in roun
tches from half an inch to two inches in diameter, sprinkled u
skin in various parts, as upon the trunk, neck, arms, and l
se patches are identical with the circumscribed patches which
upon the skin in the lichen agrius of Willan; the blotches
ed, thickened, papulated, excessively irritable, discharging b
ll quantity of ichorous fluid, and covered, when desiccated,
, squamous, laminated crusts.

czema infantile, when left to itself, has no natural tenden
lution or spontaneous cure; it is apt to merge progressively
ronic form, and undergo that kind of modification which is
to cutaneous disease when passing from an acute to a ch
e. By degrees the ichorous discharge diminishes, and the
retires to certain situations, where it continues to linger, some
siding into a state of calm, and sometimes breaking out afre

the urgent symptom of the whole, is the teasing, the intense, the violent iching; sometimes the itching is constant, with frequent exacerbations; sometimes there are intervals of repose, which are apt to be disturbed by any change of temperature, and then a violent attack of pruritus recommences; but the crowning suffering of all occurs at night; the child is often frantic with itching; it scratches with all its force, digging its little nails into the flesh, while the blood and ichor run down in streams. At last, worn out with suffering and exhaustion, the child sleeps, probably to be awaked again several times in the night by a repetition of the same agony. This constant suffering naturally wears out the child's powers, and added to the mal-assimilation, brings about the state of atrophy previously described. But it is remarkable how little the strength and spirits of the child are affected by these separate paroxysms of suffering; in the morning, after a night of distress, the little thing is fresh and lively, eager for its food, and ready for the battle of the day; while the nurse or mother is languid and powerless, from watching and anxiety.

Not unfrequently, in eczema infantile, the mucous membrane of the mouth and nose, of the air-tubes and lungs, and of the alimentary canal, participates in the disease, and is either affected simultaneously with the skin, or takes a vicarious part. The affection of the alimentary canal gives rise to diarrhœa and the production of mucus in large quantities, and sometimes of coagulated lymph. The affection of the mucous membrane of the mouth and nose is shown by redness, sometimes aphthæ and augmented secretion; and the eczematous congestion of the mucous membrane of the air-tubes produces bronchitis in various degrees, accompanied with hoarseness, from thickening of the mucous lining of the larynx, and an excessive accumulation of phlegm throughout the lungs. This latter symptom is one which is calculated to give us some anxiety, and requires dexterous management; but it is less severe than common bronchitis, and is often as sudden in getting well as in its attack. When the mucous membrane of the mouth and air passages is affected, hoarseness is a conspicuous and striking feature of the complaint; the hoarse cry is unmistakable, and is sometimes the first and only sign of the congestion of the mucous membrane. It is a sign as diagnostic of congestion of the respiratory mucous membrane, as is whiteness of the eye of general anæmia.

DIAGNOSIS.—The distinctive characters of eczema, its physiognomy, so to speak, are, redness, with more or less disturbance of the cuticle; sometimes the cuticle is raised into pimples, sometimes into vesicles, and sometimes it is broken up in lines or in blotches, and an ichorous lymph oozes from the crevices or weeps from an abraded surface; lastly, the skin may be red, coarse, thickened, and in a state of desquamation, without any exudation whatever. Of all these signs, exudation is the most pathognomonic, and next to exudation, desquamation, and a cracked or broken surface.

CAUSE.—To conduct the treatment of eczema with success, it is necessary not only to know the habits and phenomena of the disease, in other words, its pathology, but also to be able to form some judgment as to its *cause*. Careful observation has convinced us that the essential cause of eczema is debility, debility of constitution or general debility; and debility of tissue or local debility. And further investigation has shown, that constitutional debility may present itself in three forms; namely, as an *assimilative debility*, in which the organs of digestion and secretion are principally at fault; as a *nutritive debility*, wherein the powers of nutrition are chiefly concerned; and, as a *nervous debility*, in which a morbid state of the nervous system takes the lead. In 300 cases of eczema, 278 were referable to general debility, and 22 to local debility; and of the 278 instances of general debility, the examples of assimilative debility were 143, nutritive debility 103, and nervous debility 32.

Debility stands in the position of a predisposing cause of eczema; but, as debility is itself due to certain causes, these latter must be regarded as bearing the relation of remote predisposing causes of the eruptive disease. Of the 278 cases of general debility already referred to, the remote predisposing causes, taken in physiological order, admit of being arranged under twenty-four heads, as follows: 1. hereditary diathesis; 2. strumous diathesis; 3. weakly parentage; 4. errors of diet; 5. errors of hygiene, namely, air, exercise, cleanliness, and clothing; 6. vicissitudes of cold, heat, and moisture; 7. transitions of seasons; 8. ungenial climate; 9. excessive labor, mental and physical; 10. anxiety and affliction; 11. sexual excess; 12. vaccination; 13. dentition; 14. excessive growth; 15. deranged digestion; 16. deranged menstruation; 17. uterine, reproductive, and puerperal derangements; 18. fevers, eruptive and malarious; 19. gouty and rheumatic diathesis; 20. constitutional and organic disease; 21. nervous shock and fright; 22. general cachexia; 23. hemorrhage; 24. local injury or disorder.

If we consider them in the order of their numerical importance, the arrangement in reference to the leading remote predisposing causes would stand as follows: Deranged digestion, 51; errors of diet, 33; weakly parentage, 21; vicissitudes of cold, heat and moisture, 21; anxiety and affliction, 16; hereditary diathesis, 16; ungenial climate, 14; constitutional and organic disease, 14; excessive labor, mental and physical, 11; uterine, reproductive, and puerperal derangements, 11; errors of hygiene, 10; gouty and rheumatic diathesis, 8; deranged menstruation, 7; fevers, eruptive and malarious, 7; excessive growth, 7; vaccination, 7.

In reference to the three subdivisions of the remote predisposing causes, namely, assimilative, nutritive, and nervous, the most numerous remote predisposing causes of assimilative debility are met with under the heads of—deranged digestion, 49; vicissitudes of cold, heat, and moisture, 13; constitutional and organic disease, 12; and anxiety and affliction, 11. The chief remote predisposing causes of nutritive debility occur under the heads of—errors of diet, 28; weakly parentage, 13; hereditary diathesis, 12; vaccination, 7; excessive growth, 7; and errors of hygiene, 6. The most numerous remote predisposing causes of nervous debility are met with under the heads of—anxiety and affliction, 5; excessive mental and physical labor, 4; ungenial climate, 4; uterine, reproductive, and puerperal derangements, 4; nervous shock and fright, 3; weakly parentage, 3; and vicissitudes of cold, heat, and moisture, 3.

After the remote predisposing and the predisposing causes of eczema, follow the exciting causes, which are best illustrated by the group of local causes. Of the twenty-two cases referable to local debility, the exciting causes admit of being assembled under the following heads: namely, cold; heat; moisture, with cold or heat; clothing, bedding, etc.; friction; local irritants; local injury; varicose veins. The most important groups in numerical value were, cold; local injury; heat; local irritants; and varicose veins.

Among other exciting causes of eczema may be noted mercury, opium, copaiba, &c. Eczema excited by mercury has received the name of hydrargyria; erythema mercuriale; and lepra mercurialis. These are examples of common eczema induced by an irritant medicine, but they have been described erroneously as specific affections. Dr. Alley has gone the length of making three varieties of hydrargyria, namely, mitis, febrilis, and maligna, the latter being nothing more than an eczema excited by mercury and complicated in its symptoms by salivation. We knew a lady in whom a dose of mercury, however small, produced an attack of erythematous and papulous eczema; she immediately detected the minutest quantity inadvertently given, and on one occasion had an attack of the eruption from the accidental temporary contact of gray powder with her skin; she was the subject of an eczematous diathesis. Several examples of eczema from the use of opium are on record, and the eczema of copaiba is sufficiently well known. A poultice or water dressing not unfrequently determines an eczema, and we have several times seen it induced by the tincture of arnica, used as a lotion for a bruise.

PROGNOSIS.—Eczema presents itself in such an infinite number of degrees, that the prognostics of the disease must be determined chiefly by the powers of constitution of the patient. It is not in itself grave; but as it always indicates the presence of a *causa morbi* in the system, it is right to infer that the patient cannot be restored to perfect health until that *causa morbi*, whatever it may be, is removed. For the same reason, eczema is sometimes an indication of what is popularly termed a "break up" of the constitution, and is never to be looked upon lightly: it is commonly, not the disease, but the mere symptom of the disease under which the patient labors, and will get well without trouble when the patient is restored to health.

TREATMENT.—If the foregone premises with regard to the causes of eczema be correct, and we believe them to be so, the treatment of eczema resolves itself into a treatment of debility, a treatment of constitutional debility, and a treatment of local debility; and the influence which we are called upon to exercise over our patients is one which shall have for its object to restore power, and thereby to regulate function and to confirm health; for health is nothing more than correct function united with normal power.

In general terms, our constitutional treatment must be directed to the regulation of the functions; and, concurrently with regulation of functions, to the restoration of the tone, the vigor, the vitality of the

ral system. In the most numerous group of cases, those which
nd upon debility of assimilation, our attention is principally di-
d to the digestive organs and the secretions. In the next most
erous group, those which are due to nutritive debility, the diges-
and secreting organs must also be carefully examined, although
are less likely to be faulty than in the preceding group; and we
enabled, sooner than in the former case, to resort to our strength-
g remedies. The same remark applies to the third group, origi-
ng in nervous debility; while, in these latter, we have to deal with
special indication of weakened power of the nervous system.

more particular direction is given to our treatment by the recog-
on of the remote predisposing cause. The commonest of the remote
lisposing causes of eczema we have seen to be derangement of
estion and errors of diet; we have but to include the consideration
these causes in our general treatment for regulating the digestive
ans and secretions and restoring tone, and our treatment will be
nplete.

Next to the preceding comes a group of causes in which the laws
hygiene have been infringed: for example, vicissitudes of cold,
t, and moisture; errors of air, exercise, cleanliness, and clothing;
nate; and seasons. These various causes are too suggestive to call
special comment. The same may be said of another group of re-
te predisposing causes; namely, weakly parentage, hereditary
thesis, and strumous diathesis. Then comes a group, of which
or in excess, both mental and physical, together with anxiety,
iction, nervous shock and fright, and mental distress of every kind,
the leading features. Next we have debility proceeding from the
rbid operation of functions natural to the body; for example, den-
ion; excessive growth; and sexual excess. After these, there are
disorders of female functions; deranged menstruation; together
h uterine, reproductive, and puerperal derangement. And, lastly,
re is the debility which is due to the existence of other diseases:
example, vaccination; general cachexia; eruptive and malarious
ers; gout and rheumatism; hemorrhage; and visceral disorder.

The question, therefore, How shall we treat a case of eczema? is
so simple in one sense as might be imagined, inasmuch as it de-
nds a lengthened inquiry into constitution and cause; but simple
ugh in another sense, because it involves no more, but quite as
ch, as the treatment of any other disease to which the human con-
ution is liable. To treat an eczema judiciously and correctly, we
st know the sex and age of the patient, together with the predis-
ing cause, the remote predisposing causes, and the exciting cause
he disease. It may be that our treatment must be directed to the
toration of digestion and secretion; or to the strengthening of an
austed vitality; or to combating an inherent and inherited weak-
s; or to the improvement and sustainment of defective power; or
he regulation of disorders of the female system; or to the cure of
eral or of organic disease. In a word, the highest and best quali-
of medical art and science must be put in practice, with foresight
discretion, for the treatment of an eczema; the universal must
mit to become the handmaiden of the special.

The agents of the constitutional treatment of this disease, our remedies, belong chiefly to the class of aperients and tonics; while, as adjuvants, we have recourse to sedatives, alteratives, and stimulants. Our best aperients are: sulphate of magnesia; guaiacum; and the purgative extracts, either alone or when specially indicated, united with blue pill or calomel. These remedies clear away accumulated ingesta and secretions from the alimentary canal; they restore a torpid and lethargic function, in this sense performing the part of derivatives from the inflamed tissues; and they promote healthy secretion. But aperients require to be used with judgment; they must neither be carried too far, nor continued too long; our object should be to imitate nature as closely as possible; and above all, to avoid lowering the powers of the constitution. Nothing reanimates the energies of the organism so much as the healthy operation of the natural functions of the body; this should be our aim: and, when so applied and skilfully used, an aperient, instead of producing exhaustion, becomes a powerful tonic to the entire frame. The sulphate of magnesia in small doses possesses all these good qualities; it restores the function of the alimentary and urinary mucous membrane, and agrees with most constitutions. Some there are, to whom the warmer aperients or the mineral purgatives are more suitable; but this is a matter that can be determined only by observation. Again, we are influenced in our selection of an aperient, often by the season, and often by some collateral object, such as derivation; in the spring and summer saline aperients and neutral salts may be indicated; whereas in a colder season we should prefer the warmer remedies; and, in seeking for a derivative we should possibly prefer aloes to Epsom salts.

Besides their direct effects of removing obstacles and promoting normal secretion from the mucous membrane, aperients have the property of rendering absorption and nutrition more active. How usefully, on many occasions, do we put this property of aperients to a purpose, in removing effused fluids from the tissues, in carrying off waste humors, and stimulating nature to be more eager in the assumption of fresh material. It is marvellous how much may be accomplished by the judicious use of remedies; and with what certainty the results which we seek to obtain may be secured. If we run the eye down our list of remote predisposing causes, other remedies suggest themselves which may be combined with our aperients to adapt them to a particular purpose; let us instance rheumatism, which draws our thoughts towards the iodide of potassium; gout, towards colchicum; and uterine diseases, towards alkalies and iodine or bromine.

If we turn our attention, in the next place, to the tonics, which may be found suitable for the treatment of eczema, we find: simple vegetable bitters, cinchona and quinine, chalybeates, the mineral acids, hydrochloric, nitric, sulphuric, and phosphoric; and above all, arsenic. Among simple vegetable bitters, with what respect may we not speak of gentian, calumba, orangepeel, quassia, chirayta, strychnia, chamomile, and hop; in infusion or decoction; in extract or in tincture; in combination with the mineral acids, or with ammonia, soda, or potash. How admirably cinchona and quinine perform their part;

cinchona in decoction or tincture, or liquor, with sulphuric acid or with ammonia; and quinine in solution, with an excess of sulphuric acid. How perfect a remedy is one grain of quinine, with one drachm of sulphate of magnesia, seven minims of dilute nitric or sulphuric acid, and an ounce and a half of infusion of roses or orangepeel, as a gentle aperient, a corrector of acidity, a promoter of mucous secretion, and as a tonic. Then the chalybeates, iron and its salts, the sulphate, tincture of the perchloride, the citrate, the superphosphate, the iodide, and the citrate of iron and quinine. Next, the mineral acids combined with the bitter tonics, and especially the nitro-muriatic and the phosphoric. Again, as a nutritive tonic, we have the cod-liver oil; and our list of remote predisposing causes will discover several sections in which that remedy is peculiarly applicable; for example: strumous diathesis, excessive growth, and sexual excess.

All that precedes applies to any disease of the human frame; whether it be of the lungs, the heart, the liver, the brain, the kidneys, or the womb; the treatment now under consideration is catholic and not special; its aim, to bring back normal function, and so to restore health; it is the routine of the physician's art; but there is a remedy which possesses a special influence on the skin, and has long been held sacred in cutaneous medicine, namely, arsenic. When all has been effected that can be accomplished by aperients, alteratives, derivatives, and tonics, then comes the reign of arsenic; and at that moment arsenic is majestic. But arsenic must be regarded, not as our common weapon, but as our reserve; to be administered when it can do no harm, and when there is every probability of its doing good. Arsenic is a tonic, a tonic which influences chiefly the nerve-substance, and not only gives force to, but improves the nutrition of the nervous matter; in this way it operates upon the trophic system of nerves throughout the economy; and in cutaneous medicine we have evidence of its remarkable powers upon the skin. Arsenic accelerates those actions of the skin which tend to its nutrition and renovation, and therein it becomes a healer of its eruptions, and a valuable aid to the cure of eczema. But arsenic, above all medicines, must be handled with judgment and care; it must be jealously watched, lest it give rise to any unfavorable symptoms, and its use must be suspended at once if there exist even a doubt of its healthful operation. Above all, it is to be borne in mind that only at the right moment is arsenic applicable, and that right moment can alone be determined by watchful care, or by long experience.

Our *Pharmacopœia* is rich in preparations of arsenic; but the most valuable are, the liquor arsenicalis, or liquor potassæ arsenitis, and the liquor arsenici chloridi; the dose of the former applicable to an adult suffering with eczema, is two to four minims; and of the latter, double that quantity. Many years ago, in a paper on Eczema Infantile, we published a formula for the administration of Fowler's solution; and experience has assured us that no better form can be employed for its use; the formula will be found at the end of the volume. Arsenic should always be administered in small bulk, and the formula in question gives one drachm of fluid as the dose, to be taken on a full stomach, or, if possible, in the midst of a meal. The object of these precautions is obvious; arsenic is intended especially as an improver of nutrition, and therefore should be made to enter the stream of blood with the chyle; in its nature it is an irritant of the mucous membrane, and, therefore, it should be administered at a time when the lining membrane of the stomach is coated with mucous secretion, and at the same time when, by mixing with the mass of the meal, the remedy is largely diluted. Other preparations of arsenic are, arseniate of soda, arseniate of ammonia, and arseniate of quinine. The alkaline salts of arsenic are probably immediately decomposed in the stomach when taken with a meal; and the acid solution is already in a state the most favorable for combination with the gastric juice. The arseniate of soda may be administered either in powder or pill; as a powder, it should be well rubbed down with sugar, and given in doses of $\frac{1}{20}$ to $\frac{1}{12}$ of a grain three times in the day.

All the processes of renovation which depend upon nutrition are slow; hence, as we look for the good effects of arsenic in the improvement of nutrition, we must be prepared to continue its use for a considerable time. This is another reason for administering arsenic in small doses, independently of the suggestions to the same effect gathered from experience. Indeed, by employing it in larger doses we naturally frustrate the objects which we ourselves have in view; we set up the irritant action of the medicine; we excite nausea, sickness, pain in the stomach or alimentary canal, prostration of nervous power, or cough, and then we are compelled to suspend it prematurely. While, on the other hand, administered with judgment and discretion, there is no safer medicine in the *Pharmacopœia;* and at the same time, in our opinion, there is none to equal it in excellence and usefulness.

To be a successful practitioner in the treatment of eczema, a medical man must be an accomplished physician; to manage the local treatment with success, he must also be an able surgeon. The local treatment of eczema must be conducted according to the general principles of surgery. The inflamed part must be soothed in the acute stages of the disease, it must be supported and stimulated during the chronic stages, and it must be excited to a new action in the most chronic stages of all. To soothe, we must employ water-dressing, lotions, unguents, cerates, well-adjusted bandages, and rest. To give local tone, we must have recourse to stimulant applications of various kinds.

The water-dressing is useful where there is heat, pain, itching, or tension, but should not be continued beyond the period during which those symptoms exist; for, when prolonged for too great a time, it lowers the tone of the tissues and perpetuates the eruption. In our list of remote predisposing causes, it will be seen that one amongst them is "moisture with heat," the exact condition which at one moment of the disease we employ with advantage in the use of the water-dressing. Whereas, we could hardly adopt any more certain means of producing eczema artificially, than by the application for a long time of water-dressing to a healthy part of the skin. This operation is often seen in practice, in the eruptions which follow the lengthened use of poultices.

When the local inflammation partakes of the subacute character rather than the acute, and when, in the latter, the water-dressing has effected the purpose for which it was applied, we may have recourse to cerates or ointments. As a preliminary to both these appliances, all crusts and sordes should be carefully wiped or washed away from the inflamed part; if they be dry and hard, the water-dressing or the ointment-dressing may be applied with a view to soften them, and then they should be removed, and the dressing with the ointment nicely adjusted, and, wherever practicable, secured in position by a bandage; where this cannot be done, then we must have recourse to adhesive straps. In selecting an ointment, the best with which we are acquainted is the benzoated ointment of oxide of zinc. It should be spread thickly on the linen or lint, or better still, a piece of fine flannel; the dressings should be shaped so as not to overreach the sound skin; and the roller of elastic cotton bandage should be put on smoothly, and with a view to produce equable pressure on the eruption, and support to the vessels of the limb. On a part of any extent it is more convenient, and we avoid wrinkles thereby, to apply the dressing in slips, and dispose them in the manner of a many-tailed bandage; and when a limb affected with eczema is carefully packed up in the manner described, it may be left for twenty-four hours, and in more chronic cases for forty-eight hours, without disturbance; then it should be unpacked, re-dressed, wiped with a soft napkin to remove sordes, and packed up again for a similar period. While packed up in this way, the itching of an eczema commonly ceases, and the patient is saved from the annoyance and suffering of that disagreeable symptom; while the skin returns gradually to its healthy condition. If there should be heat and burning of the limb when packed, the bandage may be sopped with water, and then we get the advantage of the water-dressing superadded to the tonic treatment.

Where great irritability prevails in the constitution of the patient, we require to have recourse to sedatives; and where irritability is present in the part, we may find it difficult to contrive a dressing which will perfectly suit the eruption. Sometimes grease of all kinds acts as an irritant, and then we are driven for a while to the use of lotions, saponaceous paste, or powders. Sometimes a sedative, such as the acetas plumbi, added to the ointment, relieves the irritability; sometimes a more stimulating application, such as the unguentum resinæ, or the ointment of tar or juniper tar. Sometimes we shall derive a successful result from a lotion of soda (ʒss, ʒj ad ℥viij) with which the eczema should be kept constantly moist. At other times, we may put an end to the irritability by pencilling the surface with a weak solution of the nitrate of silver in nitric ether. Again, we rarely fail to relieve the irritability by undressing the part, washing it thoroughly with the juniper tar soap, drying it, and dressing and packing it up again as before. The successful treatment of eczema needs many resources, but only such as may be explained on the recognized principles of physiology and surgery.

The erythematous form of eczema yields very kindly to the benzoated ointment of oxide of zinc; so also do the moist forms of the eruption, the dressing being aided by moderate compression with a bandage. Eczema ichorosum must be followed up patiently with this plan of local treatment, until the ichorous secretion ceases to be formed, and the eruption heals. But the chronic forms of the disease represented by eczema squamosum, require a stimulant treatment; washing with the juniper tar soap, dressing with the tar liniment, or the unguentum resinæ, pencilling with a solution of nitrate of silver, or a strong lixivium of potash. Whenever these stronger local remedies are used, the eruption should be subsequently dressed, *more dicto*, with the benzoated ointment of oxide of zinc, and then carefully packed up.

When the chief feature of the local affection is pruritus, we find the juniper tar in all its forms, namely, soap, lotion, and ointment, invaluable. The lotion is made by mixing an ounce each of the oleum juniperi pyrolignici, sapo mollis, and alcohol, with five or ten ounces of water. This lotion, if need be, may be sponged over the whole body; while for local purposes a formula given to us by Hebra, composed of equal parts of oleum juniperi, sapo mollis, and alcohol, is an admirable remedy; or a lotion of carbolic acid, half a drachm, or a drachm to the eight ounces, and either alone or combined with an ounce of glycerine. Besides tar, as an antipruritic remedy, we may have recourse to lotions of hydrocyanic acid, and bichloride of mercury, in emulsion of bitter almonds.

In the moist forms of eczema, there is always a considerable quantity of serous lymph present in the tissues of the skin; and, until that serous fluid is removed, either by absorption from within or by excretion from the part, the skin cannot return to its normal state. It is to the presence of this fluid infiltrated in the substance of the skin, that the chronic forms of eczema owe their thickening, their induration, and their rupture; the latter giving occasion to fissures and cracks, and being most conspicuous where the skin is naturally thin, or thick and wrinkled, as on the hands and fingers, on the feet, behind the ears, along the borders of the mouth, and in the cleft of the podex. For this state of the skin, in an aggravated form, there is no remedy to compare with a solution of caustic potash. That application seems to purge the skin of its abnormal fluids, to promote absorption, and to give energy to nutrition; and it is amazing with what rapidity the cracks will heal, and the most chronic state of disease get well under this treatment. The potash solution (ʒj—ʒiv ad ℥j) is also the appropriate treatment for eczema sclerosum, eczema verrucosum, and all the more obstinate or psoriasic forms of the disease. When this solution is sponged on the tough and thickened skin, a copious exudation takes place, and the disease is moved back at once from the third to the second stage of the eruption, and becomes amenable to the milder remedies suited to that stage. It would seem as if the tissues were too weak of themselves to throw out the serous lymph with which they are interstitially infiltrated, and that, when this is effected by artificial means, they become by degrees restored to their normal state. After the application has been effected, the exudative matter should be wiped away, and the excoriated surface dressed with strips spread with the benzoated ointment of oxide of zinc and roller as already described.

In the vesicular, the ichorous, and the pustular forms of eczema, the heat, tension, and itching may be relieved by fomentations of hot water, a decoction of oatmeal, or one of poppy-heads, previously to the application of the strips and roller; and the infiltration which occurs in eczema œdematosum is best treated with strips and roller; but if there exist also infiltration and thickening of the corium, one of the weaker potash solutions may be used. In eczema mucosum, the inflamed surface should be washed with tar soap, and afterwards pencilled with the stronger tar solution; and, as soon as the exudation is conquered, the surface should be dusted over with the pulvis amyli et oxydi zinci vel calaminæ præparatæ vel cinchonæ. In eczema neurosum, we have found no remedies so potent in relieving irritability and pain as a solution of nitrate of silver in nitric ether (gr. x ad ℥j), and the stronger solution of the juniper tar.. In eczema marginatum, the best remedies are, washing with the juniper-tar soap; sponging with the lotion of the bichloride of mercury in emulsion of bitter almonds, with spirit; and pencilling the margins with the solution of nitrate of silver in nitric ether; or frictions with the unguentum hydrargyri nitratis, or with an ointment composed of equal parts of unguentum picis liquidæ and unguentum sulphuris.

In eczema capitis the hair constitutes a complication, and when the means of cleanliness are not of easy access, it may be necessary to remove it: that is a practice, however, which we have never occasion to adopt; soap, especially the juniper-tar soap, tepid water, the comb, the brush, these are all-sufficient means for removing the worst kinds of sordes and crusts; and with these it must be done even when the hair is shortened or thinned. After drying the scalp, it should be thoroughly anointed with a diluted pomade of the nitric oxide of mercury ointment (℥ss ad ℥iss), and left for twelve hours. The combing and brushing and anointing may be repeated every twelve hours; but unless the head have been previously neglected, or the accumulation of crusts excessive, the ablution will not require repetition.

When eczema capitis has entered the squamous or chronic stage, and has become a pityriasis, then the treatment must be somewhat more stimulant; for example, daily matinal ablution with the juniper-tar soap; active friction with the nitric oxide pomade; and plentiful combing and brushing; the intention of this treatment being to remove sordes and scurf, and restore healthy nutrition and tone. In this case, the combing and brushing and inunction must be practised twice in the day.

For the face, the ears, the axillæ, the nipples, the umbilicus, the groins, and the limbs generally, the benzoated ointment of oxide of zinc is the best application; and, in the chronic stages, ablution with soap, previously to the ointment dressing. For the eyelids, and the more delicate parts of the pudendum, an ointment of acetate of lead (gr v ad ℥j), or a cerate of camphor of the same strength, will be found useful. For the pudendum, perineum, and anus, when the itching is very troublesome, relief may be obtained by the application of the diluted ointment of juniper-tar (ʒj ad ℥j), after ablution with the juniper-tar soap; while on the hands and fingers it may be necessary to have recourse to the strongest mercurial ointments, after previous ablution with the juniper-tar soap. In our remarks on the treatment of eczema in general, we have already pointed out the advantage of careful dressing, clever bandaging, and in the very chronic forms of the complaint, particularly on the palms of the hands, the necessity of arousing a new action by the strong stimulus of a potash solution. The treatment of eczema ungium must be directed to the skin of the walls of the nails, and to the surrounding integument.

In eczema infantile, our first attention must be given to the diet of the infant; we must assure ourselves of the healthy state of the mother and of her milk; we must ascertain that the bowels are regular and the secretions natural; and in default of the latter being healthy we must have recourse to an aperient; we prefer for this purpose one grain of calomel rubbed down with one grain of white sugar to an impalpable powder; but we have no objection to a teaspoonful of castor oil, or syrup of senna, or fluid magnesia. The dose of calomel may be regulated by the age of the child; under one year, one grain; one to two years, one grain and a half; and two years and upwards, two grains. The dose must be modified according to the apparent strength of the child in the first instance, and in accordance with the action of the medicine subsequently, the object to be attained being such an one as will produce an efficient relief to the alimentary canal; and, moreover, such an amount of relief as shall act as a diversion to the morbid secreting action taking place in the skin. For this purpose calomel excels every other medicine; from its small bulk it is convenient for exhibition, merely requiring to be dropped into the child's mouth; it stimulates the liver to an increased flow of bile; and in children it always acts most kindly on the alimentary canal. Again, a free action of the alimentary canal being secured, all probability of *repercussion* of the eruption by the use of local soothing remedies ceases; and the mother's and nurse's alarms lest the disease should be "driven in" are set at rest. A free clearance of the stomach and bowels is therefore a primary, a necessary step, at the very commencement of the treatment. After the first dose, the calomel may be repeated according to circumstances; once a week, twice a week, every other night for a few times, even every night for two or three nights, if absolutely necessary. We usually find once a week sufficient, and we are guided to a repetition of the dose by the state of the little patient; very frequently we are enabled to bring the case to a successful conclusion without any calomel at all. If there be feverishness, fractiousness, irritability of temper, increase of pruritus, inaction of the bowels, morbid secretion of the bowels, or threatened congestion of the mucous membrane of the air tubes, then the calomel powder is to be administered at once, without hesitation and without delay. The mother or nurse soon learns the proper moment for a powder, and whatever prejudices they may have against the name of calomel, they are always ready to resort to it after they have once seen its action in this disease. We have no objection to the mercury with chalk, beyond the fact of its being more bulky and less agreeable to swallow, while it certainly possesses no recommendation which can render it superior to calomel. Occasionally, one or two grains of nitrate of potash make a useful addition to the calomel and sugar.

The diet and animal functions being regulated by the above means, and no contra-indication being apparent, such as diarrhœa or bronchitis, we proceed in the next place to our CURE, namely, our ferro-arsenical mixture,[1] which we administer in doses equivalent to two minims of the liquor arsenicalis three times in the day. To the proper administration of this remedy there are certain necessary injunctions: it *must* be administered with the meals, the best time being the middle of the meal; and the rule applies to all ages; it is *best* to administer it in one drachm doses, and without the addition of water; and it *must* be left off if it occasion, or even be suspected of producing, any unpleasant symptoms; for example, nausea, loss of appetite, colic, or prostration of power. In the latter case, its use should be suspended for three or four days, or for a week, and then it may be resumed as before, in the same or in a small dose.

If these instructions be complied with, there cannot but be one result, namely, CURE; and often, speedy cure; and whether the cure be speedy or slow, the remedy may be steadily continued, so long as it give rise to no unpleasant symptoms, until the cure is actually attained. For infants under two years we prescribe one minim of liquor arsenicalis the dose, three times a-day; from two years upwards to seven, the dose may be two minims; from seven to fourteen, three minims. At all ages we prefer to begin with two or three minims to test the susceptibilities of the patient, and then, if desirable, we increase the dose. Five minims is a maximum dose, and only admissible in alphos, for which arsenic is the specific remedy. It is remarkable how well infants of the earliest age bear this medicine, and how rapidly in them it exerts its tonic and bon-assimilative effects. As an effective, harmless tonic, arsenic stands alone, and without its peer in this vexatious disease; indeed, in eczema infantile it is specific; it cures rapidly, perfectly, unfailingly; it would be difficult to say as much for any other medicine in relation to any other disease; and we pronounce this eulogium on arsenic after a large experience in its use.

In eczema infantile we alleviate the local irritation and distress; in other words we soothe and heal the eruption, subdue the pruritus, and arrest the morbid discharge, by the benzoated ointment of oxide of zinc, rubbed down with spirits of wine in the proportion of a drachm of the latter to an ounce of the former. This ointment should be applied abundantly, and gently distributed upon the surface until every part of the eruption has a complete coating; the ointment should be applied morning and night, and if accidentally rubbed off, or used upon parts exposed to the air and friction, it must be repeated more frequently. When once applied, the ointment should be considered as a permanent dressing to the inflamed skin, and never removed until the skin is healed, unless special conditions arise which render such a proceeding necessary. To secure undisturbed possession to the ointment, a piece of thin flannel or linen rag, a sheet of cotton wool, or a slip of tissue paper, should be laid over it and maintained in position by any convenient method. Thus, when the eruption covers more or less of the entire body, a little shirt made of old linen, with sleeves for the arms and legs, and means of being fastened closely around the legs, and, if necessary, closed over the hands and feet, is the best method of effecting our purpose. This little dress is to be worn constantly, night and day, and for a week together, if necessary; it is intended as a mere envelope or dressing to the inflamed and irritated skin, and its saturation with ointment, which necessarily ensues, only contributes to its greater utility in that capacity. Where the eruption is chiefly confined to the arms or legs, linen sleeves, with or without cotton wool, or an elastic cotton bandage, will be sufficient for the purpose. On the face, no other covering than the ointment is necessary, but the latter should, therefore, be used the more largely; and sometimes, in this situation, small pieces of thin tissue paper, of convenient size and form, laid on the ointment, are very serviceable.

---

[1] The formula for the ferro-arsenical mixture will be found with the other selected formulæ at the end of the volume.

When the oxide of zinc ointment is employed in the manner now described, the formation of crusts on the eruption is prevented, in virtue of the exclusion of the atmosphere, and the consequent absence of desiccation. And when crusts are already formed, the object to be attained is, to soften the crusts by saturating them thoroughly with the ointment, and then, by gentle friction, to dislodge them, and substitute a thin stratum of ointment in their place. When the eruption passes from the acute into the chronic state, and the process of exfoliation of the cuticle is active, gentle friction of the skin with the ointment is even more desirable than in the acute stage of the disease, and is, at the same time, very grateful to the little patient On the scalp the ointment should be applied in the direction of the hair, to avoid matting, and as soon as the oozing of ichorous discharge has somewhat subsided, the hair should be gently brushed. We are rigorous in enforcing the non-disturbance of the ointment, but sometimes our *aides* carry their instructions beyond the proper point, and accumulate the ointment too thickly over a given part, retaining thereby the secretions, and interfering with the cure; in this case, if the finger be pressed upon such an accumulated shell of the ointment, the morbid fluids will be seen to ooze up between its chinks or around its edges, and the source of evil is detected. When such an occurrence takes place, the whole of the ointment should be carefully washed off the part with yelk of egg, or with the juniper-tar soap, and after drying the skin, fresh ointment substituted. This excessive accumulation of the ointment takes place the most frequently on the scalp, encouraged by the matting of the hair, a reason for keeping the hair brushed whenever the nature of the eruption permits.

Another of our instructions is to avoid washing the inflamed skin; it may be wiped with a soft napkin, to remove exudations or secretions, but washing is unnecessary, indeed injurious, as tending to irritate the skin and increase the pruritus and inflammation. While the washing lasts, and the irritated skin is softened by the water, the part is relieved and comforted; but the drying which follows after, more than avenges the temporary solace of the ablution. On the same principle, we rarely order or recommend lotions in this eruption.

In cases of chronic eczema infantile, that is, in pityriasis capitis and psoriasis partium aliarum, the stimulant properties of the nitric oxide, and nitrate of mercury ointment may be brought into operation; the former is specific for pityriasis capitis, in the proportion of one part to three of benzoated lard; and the latter, variously diluted from one part in eight to equal parts, may be used for the chronic eczema or psoriasis of other parts, particularly of the eyelids. But even in the chronic state of the disease the benzoated zinc ointment will be found to be an invaluable and indispensable remedy. In the parched state of skin left by the chronic disease, glycerine may be of use as an emollient, but when any inflammation exists, it generally proves irritant as compared with the zinc ointment.

With the three remedies above recommended, namely, the calomel powder, the benzoated ointment of oxide of zinc, and the ferro-arsenical mixture, representing, as they do, the three indications for treatment of eczema infantile, we regard the cure as certain and rapid, and failure impossible; and if success were not complete, we should seek for the cause, not in the remedies, but in the mode of administering them. So confident are we of success, that we have often undertaken the treatment of this disease without seeing the patient, and at hundreds of miles distant, being satisfied, for our only aid, with the vigilance of an intelligent mother or nurse. We have never known any evil effects, present or future, result from this treatment, but we never fail to give strict injunction, that *if the medicine seem to disagree with the child, it should be given less frequently,* say twice, instead of three times a day, *or suspended instantly,* if the child appear ill; moreover, that in the event of such an occurrence, the calomel powder should be immediately resorted to. The period of continuance of the remedies must be left to the judgment of the medical man; the treatment sometimes occupies three weeks, and sometimes more. And if a recurrence of the eruption take place, the treatment must be recommenced, and conducted on the same principle, and with the like precautions.

The diet of the child while under this treatment must be carefully inquired into; it should be good, wholesome, and nutritious; the leading constitutional indication is to nourish properly; and this idea should be carried out in the food as well as in the medicine. We find the juice of meat of great value in these cases, and it may be given either alone, as beef or mutton tea, or mixed with other food.

The consideration of diet and food brings us to an important dietetic medicine of great value in eczema when the latter is attended with emaciation, and in the chronic stage; in acute cases it is less applicable: *cod-liver oil.* The child will often take the oil greedily in its natural state; and its good effects on nutrition are speedily made apparent; it may given with safety to the youngest infant. In children somewhat older, and particularly in chronic cases, the cod-liver oil chocolate becomes an useful ingredient of diet; sometimes we combine the oil with arsenic, as in the formula at the end of the volume. When eczema infantile is complicated with diarrhœa, or congestion of the mucous membrane of the air-tubes or lungs, the arsenical remedy should be instantly suspended, the calomel powder immediately administered, and ordinary antiphlogistic remedies adopted; magnesia and aromatic confection for diarrhœa; and ipecacuanha for the bronchitic or pulmonary congestion. Where the air-tubes are loaded with phlegm, an emetic is sometimes useful; and a poultice to the chest and abdomen will be found to be a valuable adjuvant.

PSORIASIS.

Syn. *Psoriasis leprodes; psoriasis eczematosa; eczema chronicum squamosum; eczema sclerosum.*

PSORIASIS is a mitigated and chronic form of psora or eczema; and the term is especially applicable to that period of eczema when the skin is red, coarse, thickened, wrinkled or smooth, brittle, dry, itchy, desquamated, and disposing to become moist on being rubbed. In these symptoms we recognize the squamous form of eczema, and comprehend the transition of eczema into psoriasis as noted by Willan. Psoriasis has been confounded with another cutaneous disease, the lepra of Willan and lepra alphos of the Greeks; but the latter, although presenting a red, thickened, and squamous surface, is not in its ordinary state remarkable for a pruriginous disposition, and gives out no fluid secretion on being rubbed; never takes on the eczematous character, which psoriasis is prone to do, and is more decidedly chronic than psoriasis.

Psoriasis is very rarely *general*, although we have seen such cases as a sequel of congenital eczema; usually, it is *partial* and distributed in patches (psoriasis figurata) upon various parts of the body, or limited to a single region. In its general form, the skin is dry, parched, discolored, and leathery; the hairs are harsh, scanty, and broken; the face very commonly discolored and uneven; the lips thickened, cracked, and furfuraceous; the hands, and sometimes the feet dry, harsh, and thickened; the fingers and back of the hands rough and wrinkled; the flexures of the joints cracked and desquamating; and the whole surface of the body highly pruriginous, and disposed to exude a viscous secretion on being rubbed or scratched with the nails.

In its local forms, psoriasis may occur, as condensed and tough patches more or less raised above the level of the skin (eczema sclerosum); sometimes cracked, and coated over with a thick cuticular crust; sometimes in smaller and [illegible] nerous patches, not unlike large warts, and intensely pru [illegible] zema verrucosum); and sometimes, with more or less thickening, in cracks and fissures of the skin, often very painful, and not unfrequently ichorous and bleeding (eczema fissum).

There are certain situations in which eczema in its most chronic form or psoriasis more especially occurs; for example, the flexure of the joints (eczema articulorum), the fold of the ear, the back of the neck, the anus and perineum, the legs below the knees, the back of the hands, the fingers, and the palm of the hands (psoriasis pálmaris).

In the palm of the hands the term psoriasis has been used in a generic sense for inflammatory congestion of the skin associated with desquamation, whatever its nature and origin; hence it becomes necessary to distinguish the true or eczematous psoriasis pàlmaris from a syphilitic psoriasis palmaris; while, occasionally, we meet with a third psoriasis palmaris having its origin in alphos; alphos palmaris.

The *diagnosis* of psoriasis rests on its alliance with eczema; the ichorous element is always present at some period of the disease, and is equally ready to be roused afresh; and its psoric or pruritic character is strongly marked. It is not to be confounded with alphos, the lepra of Willan, although the term psoriasis has long been in use in connection with the latter disease. There are wide differences between them; alphos is a specific affection, fôr the most part hereditary, not susceptible of being excited by external causes, and independent of the general health: it is essentially diathetic. Whereas, psora and psoriasis originate in the common disturbing causes of the economy, may be excited by external irritants alone, or by any constitutional disturbance affecting the digestive, the nervous, or the nutritive system. Psoriasis is essentially psoric or pruritic; alphos is pruritic only accidentally, and by virtue of the local inconvenience which its presence creates, or as the consequence of a complication with eczema. Psoriasis is curable; whereas, alphos is only removable, curable merely for a time; its tendency being to return.

The *treatment* of psoriasis offers special indicàtions; it is a chronic and obstinate local affection, with or without constitutional disorder. If any error of constitutional health can be discovered, such error must be corrected; if there be, as is more than probable, debility in any shape, that debility must be removed by all the means at our disposal; and the virtues of arsenic may be appealed to as a special tonic, not only as an improver of nutrition, but also as a stimulant of the cutaneous tissues.

But our chief remedies in psoriasis are local: the tar soap; carbolic acid soap; tar ointment; the ointment of tar and sulphur; the tar tincture; the nitrate, nitric-oxide, ammonio-chloride, iodide, and biniodide of mercury ointments; and as a stimulant for emptying the tissues of their excess of fluids, the potash solution of a strength proportioned to the purpose to be attained, ranging from one-eighth to one-half of potassa fusa. It is in these cases that we derive advantage from a carbolic acid lotion, a lotion of the bichloride of mercury, the juniper-tar lotion, and also, from a solution of nitrate of silver of moderate strength.

PITYRIASIS.

Syn. *Lepidosis pityriasis*, Mason Good; *erythema pityriasicum; eczema pityria*
psoriasis furfuracea; dartre furfuracée, Alibert; *branny tetter; dandriff.*

Pityriasis is a superficial inflammation of the skin, accomp
with a furfuraceous or bran-like desquamation and a conside
degree of pruritus. Its special seat is the scalp; but it is als
with occasionally upon the eyebrows, and among the hair o
whiskers and sternum, and not unfrequently on the face of young
sons' and children. Its particular signs are, redness, heat, pru
and desquamation of the cuticle in minute scales, which have
compared to fine bran, and are sometimes so small as to be te
mealy or farinaceous.

The degree of redness of pityriasis and the depth of cutaneou
sue involved, present some variety; in certain instances the re
is almost absent, and we are struck with the whiteness of the aff
part; in another case, the redness is more marked, but very su
cial, a mere erythema; while in a third case, the vascular conge
extends more deeply; there is some degree of serous infiltration
coarser scales. This latter is the common type of pityriasis ca
and is a state not unfrequent in persons of an eczematous diathe
as a sequel of eczema capitis; a condition which, on the general
face of the skin, would be termed psoriasis, but on the scalp go
the name of pityriasis. On the scalp the disease is apt to caus
fall of the hair, and the trichorrhœa sometimes runs on to de
alopecia.

Willan and Bateman distinguished four varieties of pityri
namely, pityriasis capitis, rubra, versicolor, and nigra. *Pity*
capitis is an erythematous desquamation of the heads of infant
old persons, which is prone to degenerate into eczema, or, in
language, into "porrigo." They also include in the same ter
little broken clots of sebaceous substance which are so frequently
on the heads of infants. *Pityriasis rubra* is an eruption of elderly
sons, and a slight form of "psoriasis diffusa." *Pityriasis vers*
is an affection that will be treated of among discolorations o
skin, under the name of chloasma; and *Pityriasis nigra* is an ec
erythematosum of "children born in India and brought to
country."

We may therefore regard pityriasis as a convenient term for d
guishing a more superficial congestion of the skin than that of
asis; although, in reality, merely a milder form of psoriasis, asso
with a lighter and thinner kind of desquamation. In this sen
apply the term to small, circular, scurfy spots that are apt to
themselves on the face and neck of children. In the majori
instances, pityriasis proceeds from nutritive debility; it is chro
its nature, often lasting for several years.

In conducting the treatment of pityriasis, its frequent orig
nutritive debility must be borne in mind, although it is us
amenable without much difficulty to local means. In recent and
cases, the use of an ointment composed of one part of the nitric

mercury ointment to three of benzoated lard, gently rubbed into e scalp night and morning, will generally restore the skin to a ealthy state; while, in more obstinate and severe cases, the diseased kin should be thoroughly washed every day with the juniper-tar or carbolic acid soap, and afterwards anointed with the same pomade. For the spots in the faces of children, the diluted nitric oxide of mercury ointment and soap ablutions are usually all that is necessary; or, in obstipate cases, a lotion of emulsion of almonds with the bichloride of mercury, one grain to the ounce. Hardy recommends the use of sulphur both internally and externally; for external use, extremely diluted (gr. xv ad ℥j), or a little acid ointment (♏ xv ad ℥j).

In the above acceptation, and in accordance with the definition of Willan, pityriasis is an exfoliation of small, thin, white scales, from a chronically and superficially inflamed derma; the scales being comparable in size and appearance with the *bran* of wheat. But under the name of PITYRIASIS RUBRA, Hebra has singled out and described a very remarkable form of cutaneous disease, characterized by a chronic and deeper inflammation of the derma, associated with a profuse exfoliation of thin, white shreds or flakes of epidermis, which break away in the form of scales; the latter being considerably larger than the scales of bran, and therefore only analogically related to pityriasis. The pityriasis of Willan is always local, and generally limited to a small extent of surface; the pityriasis rubra of Hebra occupies the entire surface of the body, and is distinguished by certain definite characters, for example, deep redness; absence of moist excoriation, pruritus, or rupture of the derma; and the production of scales in such profusion, that the surface looks to be covered with thin white flakes, which break away and may be collected in large quantities daily in the clothes or bed of the patient. And this profuse desquamation is accompanied with waste of the tissues of the patient, and consequent emaciation.

Hebra has seen three examples of this remarkable and rare disease, where the entire integument was affected; we have seen only two instances of pityriasis rubra universalis, and one of pityriasis rubra localis, and these cases we shall presently narrate.[1] Hebra describes the affection as follows: An intense redness of the entire skin, disappearing on pressure with the finger, and displaying a yellowish ground; a constant exfoliation of fine, white, loosely attached scales; persistent deep redness, without infiltration, papulæ, fissures, moisture, or vesicles; scarcely any itching, and no excoriation. The disease begins suddenly, quickly spreads over the whole body; is rarely local;

---

[1] The case described by Dr. Wilks in the Guy's Hospital Reports for 1861, under the name of "general inflammation of the skin, or dermatitis," appears to correspond with pityriasis rubra. The general features of the case were as follows: A man aged thirty-four, on April 4th, was covered over the whole body with a thick roseolous rash; in a few days, the skin was acutely inflamed, red, and slightly swollen. A week later, the surface "was beginning to be rough from desquamation, and on the 14th, large flakes of epithelium were peeling off the body and limbs." The palms of the hands and soles of the feet did not show redness at first, but in the desquamating stage peeled like the rest of the body, and he subsequently lost the nails of his fingers and toes. "The desquamation was universal, and at the end of a month the man was convalescent."

and undergoes scarcely any variation of appearance throughout its course, which may be prolonged for years. Sometimes it presents a crimson and purplish hue from sanguineous changes, loses its depth of color as death advances; and subsequently becomes yellowish, tawny, or gray; but after death leaves no trace of its existence beyond the squamous state of the epidermis. In the early period of the disease, the patient experiences no inconvenience whatever beyond the strange appearance; he pursues his ordinary avocations and believes himself well; by degrees he feels a sense of weakness and incapacity for exertion; his appetite previously good begins to fail; his muscular power flags; he becomes emaciated; and finally sinks from exhaustion.

Our own experience corroborates exactly the description given by Hebra, as is shown in the following cases, which serve to illustrate besides, some additional features of the disease in relation to its origin and associations.

CASE 1.—A retired merchant, aged sixty-eight, with an habitually dry skin, has been subject for more than twenty years to dryness and desquamation of the palm of the hands, accompanied occasionally with dry fissures in the lines of motion. This state of the hands has continued to teaze him from time to time until the present date, June, 1866. He was otherwise well in health, and his health has always been good until the last few years.

Two years ago, namely, in May, 1864, he suffered a fresh attack of inflammation of the palm of the hands with thickening and desquamation of the cuticle; the latter breaking at the lines of motion and peeling off in broad laminæ. He was advised to go to the seaside, and while there took a chill which was followed by a smart attack of dermatitis of the face and head, which was treated as erypsipelas. On his return home in the autumn the hands were improved, but still retained their wonted dryness and roughness.

In April, 1865, the hands again became troublesome; strong stimulants were applied, with active internal treatment, and he again went to the sea. While at the sea coast we were consulted as to his case; he was well in health, without a symptom of constitutional disorder; but the palmar surface of the hands was stripped of its cuticle from the wrist to the tips of the fingers. The exposed derma was intensely red and glazed; without swelling, discharge, excoriation, or cracks, and was bounded at the circumference by a ragged margin of thickened cuticle. He made no complaint of soreness; his only inconvenience was a feeling of burning heat and stiffness; and he was free from eruption on every other part of the body. The treatment he was pursuing was water dressing, which we exchanged for the benzoated ointment of oxide of zinc and a bandage; and under the latter application the comfort of the hands quickly improved, and the skin put on a more healing appearance.

Having had a similar case, somewhat less extensive, under our care on a previous occasion, we regarded this as one of a peculiar form of psoriasis palmaris, and headed our notes of the case with the term *psoriasis squamosa rubra.*

In January, 1866, this gentleman called to consult us for a dermatitis f the feet, similar to that which he had previously suffered in the ands. The derma was intensely red, denuded of cuticle, smooth, lazed, and dry, and so tender as to deprive him of his usual exercise; while the inflamed surface was bordered around the circumference by a ragged edge of broken epidermis. The palm of the hands was normal in color, but rough, and he was otherwise in good health. At a second visit he complained of great soreness of the heel of one foot; and at this part a blister was raised. On returning home he felt the cold severely, and two or three days later was seized with phlegmonous erysipelas, which began at the tender heel, and spread up the leg to the middle of the thigh.

The phlegmonous erysipelas ran its course from the latter end of January to the middle of April, when the last sinus healed up. He suffered a good deal constitutionally during this period; was delirious, had a black, coated tongue, and was greatly debilitated. During the progress of the erysipelas, the dermatitis of the soles of the feet disappeared; but as the erysipelas subsided, a blush of redness gradually, but in a short time, spread over the whole body from the crown of the head to the sole of the feet, no part of the skin escaped.

A few days subsequent to the complete development of this attack we were called to see him, when he presented a very remarkable appearance. His skin was scarlet over the whole surface, the redness terminating abruptly at the edge of the eyelids, like a mask, and the conjunctivæ being somewhat suffused. But everywhere, next to the redness, the most singular feature of the disease was the projection from every part of the surface of thin white laminæ of cuticle, arranged for the most part in undulating parallel lines, and standing out from the skin like the edges of plate armor. On the limbs, the fingers, and nose, the free edges of broken cuticle, placed at regular distances, and running transversely in undulating and jagged lines, suggested the idea of the ripple of a calm sea, or of lines drawn in chalk upon a deeply red ground. And when the hand was passed down the arm or the leg the surface felt smooth, and no impediment occurred; but when the hand was carried in the opposite direction it was interrupted by the edges of the laminæ; and the latter were broken off in scales, which accumulated in great numbers in his bed. At one moment the prominent laminæ gave the idea of imbricated scales; at another, when the lamina was broader and broken and somewhat rolled, of fringes and rags. The contrast of the deep scarlet ground, and the whiteness of the free edges of the cuticular laminæ, was very curious. The edges of the laminæ were commonly half an inch apart, and the breadth of the free edge about a quarter of an inch. The back of each phalanx of the fingers was crossed by three or four lines, and the nose by six or seven. On the limbs, as also on the face, the free edge of the laminæ was directed downwards; on the convexity of the joints it presented a curve, having the prominence of the joint for a centre; on the forehead and scalp the lines were segments of a circle, of which the centre was the summit of the head; and on the trunk, as also on the palms and soles, the desquamation and the resulting

scales were irregular, for the most part taking prominent points
their centre.

The general surface of the skin was soft to the touch, but tha
the fingers was hard, and looked glazed and stretched; the fin
themselves were rigid and crooked; and the nails thickened and ro
and uneven on the surface. On the rest of the integument there
no thickening, no infiltration, no moisture or discharge, very li
pruritus, and no rhagades, excepting on the heels and along the o
border of the feet, where the fissures were dry. The general app
ance of the skin, in fact, suggested the idea of a *dermatitis squa*
rubra; a name by which we designated the first case that came u
our notice, and before we had read Hebra's description of pityri
rubra.

It is surprising, with all the appearance of local disorder occur
in this case, that there should exist so little personal suffering
inconvenience. Our patient has a good, even a large appetite; enj
his food; digests well; sleeps soundly; and, to adopt his own exp
sion, has "neither pain nor ache." But there are two symptoms
are unsatisfactory and lead to apprehension; the tongue is soft
pulpy, and tremulous, and the pulse has never fallen below one
dred during the whole course of the disease, and is often intermitt
For a long time it was never less than 110; and there is some li
quickness of manner that seems to be associated with the rapid ci
lation. The phlegmonous erysipelas necessarily kept him in bed
many weeks, but he now gets up daily, enjoys his warm bath,
garden, and the society of his children. The disease has prese
the same unvarying appearance for two months; there is no differe
in the tint of redness, and none in the amount of exfoliation of
epidermis.

Subsequently, however, to this period, a gradual improvemen
visible in the skin. The trunk of the body and the inner side of
limbs are losing their redness and returning to their normal tin
color; and on those parts there exists some pruritus and a slight
tinous exudation or dampness that is suggestive of eczema. An
would seem not unlikely, that the correct pathology of the diseas
an eczematous inflammation in which cuticular exuviation takes
place of ichorous exudation. This view of the nature of the dis
would suggest the term *eczema foliaceum* as not inappropriate; o
adhering to the idea conveyed by the absence of ichorous exudat
we regard the malady as a pityriasis, we might employ the
pityriasis foliacea, as synonymous with the pityriasis rubra of He
or *pityriasis foliacea rubra.* Some mark of distinction is obvio
necessary to avoid confusing so grave and serious an affection
the insignificant pityriasis rubra of Willan.

CASE 2.—A well-marked example of psoriasiss squamosa ru
similar to the incipient attack in the case above described, occur
in an old lady seventy one years of age; it began by thickening
hardening of the cuticle of the palm of the hands, followed by cr
ing and subsequent peeling of the horny layer; and this case fur
illustrated the extreme obstinacy of the disease and its resistanc

remedies. It had existed twelve months when it came under our notice for the first time; we watched it and treated it for ten months, and it was almost as extensive when we left it, as when we undertook its management; although, during that period, we had directed an arsenical course of three months; a course of Donovan's solution for three weeks; bichloride of mercury for one month; nitro-muriatic acid with a bitter; small doses of sulphate of magnesia with quinine, with nitrate of potash, and with colchicum; iodide of potash with colchicum; citrate of iron and quinine; liquor cinchonæ with ammonia, and with sulphuric acid; gentian with soda; and various remedies besides; whilst locally, we employed, oxide of zinc; chloride of zinc; acetate of lead; ammonio-chloride, nitrate, and nitric oxide of mercury; sulphur; iodine; carbolic acid, and tar. The disease sometimes improved and sometimes retrograded without any explicable cause.

On first seeing the patient the cuticle had exfoliated from nearly the whole of the palmar surface of the hands and fingers; the derma was of a deep red color, dry and glossy, and coated by a thin stratum of new cuticle; there were no cracks in the derma, but the fingers were stiff and hard, and she dreaded to bend them for fear of breaking the skin. There was no discharge and no pruritus; and, in places where the cuticle still remained adherent, it was yellow, transparent, and horny, and evidently deprived of its vitality. In the course of this attack the lady suffered from pain and aching in her limbs, apparently of a rheumatismal character; but there was little disturbance of her general health; she took her food with appetite, and digested well; but she grew thin and became exhausted in strength, and shrunk very considerably in bulk. In this case the dermatitis did not reach the matrix of the nails, which were consequently unaffected.

Case 3.—The first case of pityriasis rubra foliacea that came under our notice occurred in an old gentleman sixty-nine years of age; it attacked him suddenly in the month of November, and in a few days spread over the whole body. He was scarlet from head to foot, while the skin was ragged with shreds that looked like feathers adherent to the surface. He could eat and drink, and suffered no inconvenience from his apparently skinless state. He remained in this condition during the winter, but recovered in the spring, and by the summer was perfectly well.

In October of the following year, he paid us a visit, complaining of a slight return of his old complaint, and a few days later caught a severe cold which ended in bronchitis, and in a sudden reappearance of the pityriasis rubra over the whole body. The disease presented the same characters as before; namely, intense redness, copious exfoliation of cuticle, absence of moisture and pruritus, and unchangeable persistence. We requested that the scales which came off into the bed might be saved, and in one week the quantity amounted in weight to eight ounces; another week seven ounces; a third six ounces; and so on week after week; the case might be regarded as one of epidermal flux. But with all this loss he retained his appetite and cheerfulness; and although he grew thin, declared that he suffered no inconvenience. He recovered from the bronchitis, but a few months afterwards, unfortunately suffered another attack, from which he died. Had it not been for this accident, there seemed to be every probability of his recovery, as on a former occasion. The last visitation of the cutaneous disease lasted from October to February.

The DIAGNOSIS of the pityriasis rubra of Hebra, or pityriasis rubra foliacea, rests on its strongly-marked and peculiar characters, for example: intense redness without exudation; cuticular exfoliation exposing a red and glazed surface without swelling, excoriation, or rhagades; profuse foliaceous desquamation; frequent occupation of the entire surface of the body; increased severity in the hands and feet; persistent and unchanging appearance; resistance of treatment; absence of pruritus or personal suffering; normal state of the digestive functions; and gradual emaciation and loss of muscular power. Eczema is very rarely general in its attack; and is remarkable for ichorous exudation, infiltration of the cutaneous tissues, severe pruritus, and the formation of crusts or scabs; and when, in its chronic stage, exudation ceases to appear, the integument is thickened and rough, and the cuticular scales small and partial, not exfoliations of the general surface as in pityriasis rubra, but of the uneven and rugged subdivisions of the thickened and infiltrated portion of skin. In a few instances the red and glazed freshly healed surface of eczema articulorum may remind us of pityriasis rubra; but the previous history of the case removes the suspicion; these appearances are secondary in eczema, but primary in pityriasis rubra. The pityriasis of Willan is so slight in its nature and superficial in its grasp upon the skin, as to offer little chance of confusion with pityriasis rubra. Not so, however, with regard to alphos; the latter disease, when general and much inflamed, approaches very nearly to pityriasis rubra; there is the redness, the abundant desquamation, the dryness and glossiness of surface, and the absence of infiltration. Hebra would doubtless call our attention besides to the pruritus of alphos, and to bleeding-resulting from scratching; but alphos, in Britain, is not a pruritic affection, lesions resulting from scratching are very rare, and it is evident, from Hebra's account of the disease, that it is dissimilar to that which prevails amongst the inhabitants of this country.

So few examples of pityriasis rubra foliacea have come before us, that we are unable to express any positive opinion as to the *cause* of the disease. Our own cases, it will be seen, occurred in elderly persons, in whom there existed a certain proclivity to *nutritive debility*. Hebra's cases manifest to a greater extent the same tendency; while, in those that we have narrated, there was associated with this infirmity, erysipelas, simple and phlegmonous, rheumatism, and bronchitis. These considerations will serve as our guide in the *prognosis* of the disease. If we found our conclusions on the experience of Hebra, our prognosis must be unfavorable; but the cases which have fallen under our own observation have given us a more encouraging degree of hope. We believe that the gentleman who forms the subject of the first of our cases will recover, indeed, has since recovered. We see no reason why a similar good result, as far as the cutaneous disease is concerned, may not happen to case No. 1; while we are confidently of opinion, that but for a very severe bronchitis, in an unusually inclement season, and in a man above seventy years of age, our third case would have issued in cure on the last as on a previous occasion.

TREATMENT.—In his treatment of pityriasis rubra, Hebra took alphos as his standard, and had recourse to those remedies which are known to be of service in the latter disease. We, on the other hand, selected the treatment of chronic eczema as our guide. We are able to corroborate the experience of Hebra, that arsenic, mercury, iodine, sulphur, and tar, failed entirely in being of any service; and, that the most favorable results followed the use of warm baths, taken daily and prolonged for an hour or more at a time; and subsequent inunction with a soothing and sheathing pomade, such as that of the benzoated ointment of oxide of zinc. In Case 3 we applied the ointment with strips and roller, as advised for eczema. Of internal remedies, we derived the best results from nitro-muriatic acid with a bitter infusion, the citrate of iron and quinine, and the phosphate of iron. Hebra made trial of cantharides, antimony, decoction of the woods, and sarsaparilla, in addition to the remedies already mentioned, and includes the whole under the denomination of useless means.

LICHEN.

Syn. *Exormia lichen*, Mason Good; *Schwindfletche*, Germ.; *lichenous rash; papular rash.*

As eczema is the type of the vesiculæ of Willan, lichen is the type of his order Papulæ. But, as it has been already shown that vesicles are not necessary to constitute an eczema, and that eczema is a papular as well as a vesicular eruption, we have now only to treat of those papulæ which may fairly be considered apart from eczema, and which may be regarded especially as a papular eruption. In fact, we purpose to assemble under this head only those affections which are not admissible into the family of eczema, under the comprehensive definition of that disease already given, and which are obviously different in their nature. We hope in this way to avoid the confusion which Willan himself, as well as more modern authors, have introduced into this group. By lichen we intend to convey the idea of papulæ which are *dry* in their nature throughout their entire existence, and are never associated with an exudation of any kind; whereas, all papulæ which at any period of their course are affected by exudation, or are associated with exudative diseases in any other part of the body, should at once be turned over to eczema, the mother of moist pimples and exudation.

On this principle it is clear that we must banish lichen agrius from the family of lichens and restore it to eczema, to which, from its exudative nature, it obviously belongs; indeed, this transfer is anticipated by the term *lichen eczematosus*, which has already been attached to it; the eruption being, according to its character, an eczema lichenodes, or, more simply, an eczema papulosum et ichorosum.

And also with the view of simplifying the group, we shall consider under the head of lichen, the strophulus of Willan, or rather such of the varieties of strophulus as are true to the characters which he has laid down as the type of the affection. It is obvious that several of his varieties of strophulus should be regarded as forms of eczema infantile rather than true papulæ, and have been retained in consequence only of their occurrence in infants; strophulus being especially an eruption of children. But as a lichen strophulosus, a lichen of infants and children, strophulus will occupy its proper place in the lichenous group, and especially by the side of lichen urticatus, which it resembles in several respects.

LICHEN (Plate XI.) is an eruption of papulæ, resulting from congestion of the vascular plexus of the follicles of the skin, and some degree of infiltration into the tissues of the walls of the follicles. The pimples are conical in figure, minute, more or less deeply red, transparent at the summit, and itchy; and may be compared to the normal asperity of the skin, termed cutis anserina, although, from the presence of vascular congestion and infiltration, they are necessarily larger and more prominent than those of the latter.[1] They are solid, and contain no fluid, the transparency of their points being due to their anatomical structure, namely, the conical wedge of cuticle which occupies the aperture of all the follicles; and when scratched, they give forth a drop of blood, followed by an oozing of a minute drop of serum.

When the pimples of lichen are dispersed singly over the skin, they subside by degrees, and are followed by a slight exfoliation, corresponding with the summit of the papule. When they occur in clusters they are accompanied with a diffused redness, and on the decline of the redness, are succeeded by a laminated exfoliation of the cuticle. When, however, they have been rubbed or scratched, each papule becomes covered on the summit with a small scab, which is sometimes thin and grayish, sometimes thick and amber-colored, or brown, and sometimes, when arising from desiccated blood, almost black.

The pruritus of lichen is of the hot and tingling kind, and sometimes very severe. Like eczema, lichen is non-contagious, and is unattended with special constitutional symptoms.

The *varieties* of lichen are founded on the manner of distribution of the eruption, on its symptoms, on its cause, on its situation, and on the figure of its pimples. The *distribution* of the pimples is sometimes dispersed and general, as in lichen simplex; sometimes aggregated, as in lichen circumscriptus, lichen circinatus, and lichen gyratus. The *symptoms* are sometimes remarkable for the pungency of the itching and tingling, as in lichen urticatus, or for the color of the pimples, as in lichen lividus. Heat of climate gives a distinctive character to lichen tropicus, and situation to lichen pilaris and lichen strophulosus.

---

[1] The papulæ of lichen are very little larger than the prominent papules of cutis anserina; the measurement of the latter being half a line in breadth when round, and three-quarters of a line by half a line when elliptical in figure.

Hebra classes lichen under the head of dermatoses squamosæ, a group consisting of three members, namely, alphos, lichen, and pityriasis; and the kinds of lichen of the same author are lichen ruber and lichen scrofulosorum. Lichen ruber we believe to correspond with our lichen planus; lichen scrofulosorum is a variety which we have not seen; but we have introduced his definition of the disease after our description of lichen planus.

In a tabular scheme we should arrange the varieties of lichen as follows:—

Lichen simplex,
" dispersus,
" circumscriptus,
" strophulosus,

Lichen urticatus,
" tropicus,
" planus.

To which may be added as sub-varieties:—

Lichen pilaris,
" lividus,

Lichen circinatus,
" gyratus.

Lichen lividus and pilaris, appertaining in chief to lichen simplex; and lichen circinatus and gyratus to lichen circumscriptus.

Lichen simplex (Plate XI. A).—In the simplest form of lichen the papulæ are more or less thickly set or dispersed over the surface of the body. They are of moderate redness, pretty uniform in size, and attended with considerable itching and tingling; and when they subside, are followed by a moderate degree of laminated and furfuraceous desquamation. When the eruption is scanty but general, they present more or less of a corymbose arrangement like the blotches of measles; and in some parts of the body this disposition is remarkable. It is to be noted also that in certain situations the papulæ are larger than in others; for example, on the face and upon the limbs. Sometimes the extent of the eruption is exactly bounded by the limits of an article of dress, as in a well-marked case of lichen simplex illustrated in our Portraits of Diseases of the Skin,[1] and in another and similar example which we have more recently seen.

Lichen dispersus, vel pruriginosus.—Instead of being thrown out in crops and distributed more or less abundantly on parts or on the whole of the skin, lichen sometimes presents a dispersed character; the papulæ are solitary and scattered; the commoner seats of election being the front of the forearms, the lower part of the abdomen, the inside of the thighs, and the ankles. The papules are hard to the touch, only slightly red at first, but more conspicuous after they have been scratched, and especially remarkable for a severe and teasing itching, the eruption bearing no proportion in appearance to the annoyance and suffering which it occasions. This variety may be regarded as representing especially the pruritic element of lichen, while lichen simplex represents its papular character; hence we have termed the eruption lichen pruriginosus. It is the commonest, although not the typical form of lichen, and is frequently met with as a sequel of scabies. This eruption is probably the same as that described by Willan under the name of *prurigo mitis*.

---

[1] Plate IX. Q.

LICHEN CIRCUMSCRIPTUS (Plate XI. E F) is an aggravated form of the eruption, in which the papulæ are elevated in considerable numbers, and constitute one or more patches of a circular or oval form. The remarkable characters of the eruption are the close aggregation of the pimples, and the abrupt line by which they are separated from the adjoining skin. They are met with chiefly on the chest, the hips, and the limbs; and when they subside, the skin remains for some time rough, wrinkled, and furfuraceous.

LICHEN STROPHULOSUS (Plate XI. K L M).—The strophulus of Willan is clearly a lichen, modified by its development on the sensitive skin of infants and children, instead of the firmer and less irritable skin of the adult. The papulæ are large as compared with those of the adult; they are sometimes of a vivid red color, sometimes only reddish; at other times whitish, with a reddish areola; and sometimes white and smooth. They are accompanied with pruritus, subside in a period varying from a few days to a few weeks, and are followed by a furfuraceous desquamation of the cuticle.

Willan describes five varieties of this eruption, namely, intertinctus, albidus, confertus, volaticus, and candidus.

Strophulus intertinctus, the red gum or red gown,[1] is distinguished by papulæ of a vivid red color, interspersed with red dots (probably congested follicles without prominence), and large erythematous patches. Sometimes, he says, there are vesicles on the hands and feet, but the fluid is absorbed without rupture. The rash occurs for the most part on the cheeks, the forearms, and the back of the hands; but is sometimes distributed generally over the body.

Strophulus albidus is a sub-variety of strophulus intertinctus; the papulæ being hard, minute, whitish, and only slightly elevated, and sometimes encircled by a halo of redness. They are met with chiefly on the face, neck, and breast.

Strophulus confertus (rank red gum, tooth-rash) seems to belong to eczema infantile rather than to lichen. The papulæ are more extensively distributed and less vivid in color than those of strophulus intertinctus. They are sometimes developed in patches of large size, and sometimes the cuticle cracks, and they present the characters of intertrigo. Sometimes the eruption fades and disappears in a fortnight, and sometimes its duration is prolonged by repeated recurrence for two or three months.

Strofulus volaticus is a rarer form of the eruption, and belongs to the group of lichen circumscriptus. It breaks out in circular patches or clusters of papulæ, which turn brown in four days and disappear. Other patches appear in succession, and the disease acquires a duration of three or four weeks.

Strophulus candidus is a hybrid that would perhaps be better omitted altogether. The papulæ are large, smooth, and shining, and have no redness around their base. They would seem to be whiter, smoother, larger, and more passive than the papulæ of strophulus albidus. They have been met with on the shoulders, the upper arms, and the loins; and they disappear in about a week. Willan saw them once associated with strofulus confertus, appearing on the face and neck; and, in another instance he found them on the arms of a child three years and a half old, who was cutting some double teeth, and likewise had porrigo larvalis, or, in modern language, eczema ichorosum and pustulosum of the face.

---

[1] Evidently a mispronunciation of "gum."

LICHEN URTICATUS (Plate XI. D), the lichen urticosus of Mason Good, is a natural transition from lichen strophulosus, inasmuch as it is an eruption which belongs especially to children; begins with inflamed spots, which are succeeded by larger pimples than ordinary lichen, and is accompanied with severe pruritus. This form of lichen was first described by Bateman, and is extremely well marked; the spots at their first appearance resemble gnat-bites or bug-bites, and remain inflamed for a day, after which the redness and pimple subside. When, however, they are rubbed or scratched, the pimple becomes more prominent, and bleached like the wheal of urticaria, and instead of subsiding, remains for several days; and if the scratching be such as to remove the head of the papulæ, a small drop of blood escapes, and dries up into a minute black scab. As the eruption is successive, a few spots appearing each night, and occasionally also in the day, the body and limbs become spotted all over with pimples in every stage of progress. They are commonly single in their outbreak, but occasionally form, here and there, a small cluster.

The term urticatus is warranted not only by the occurrence of muscular spasm in the pimple, which gives it a bleached appearance similar to that of the wheals of urticaria, but also by the severe and frequently intense, tingling and itching, which destroy sleep, and often affect seriously the child's health. The pruritus is commonly set up by the heat of bed, and sometimes by mental emotion. The eruption is obstinate in its nature, and often lasts for many months. The following case is an illustration of this disorder:—

A little girl, three years and a half old, delicate, but healthful in her functions, has been subject to an eruption, attended with itching, since the age of ten months. Latterly she had measles, and since that period the attacks of the cutaneous disorder have been more frequent. The eruption shows itself in the form of large red pimples, generally isolated, but frequently in clusters, particularly on the face, neck, and shoulders. The pimples are excited by warmth; for example by the warmth of bed, so that she is sometimes awakened in the night by the itching. They are also excited by mental emotion; thus, if she be scolded, the itching begins; and, to use her mother's expression, she can at all times "rub them up wherever she likes." When left to themselves, the pimples subside in the course of twenty-four hours; but when scratched, a little blood oozes from their summit, and desiccates into a small black scab. On some of the pimples a little pus forms at the points; and on the soles of her feet they run into a vesicle. Each pimple, when it does not subside at once, continues for about a fortnight; but as fresh ones are constantly appearing, the eruption has now been prolonged without amendment for three months.

LICHEN TROPICUS, or prickly heat, is the usual form of lichen as it attacks Europeans in hot climates. Dr. Winterbottom describes it as consisting "of numerous papulæ, about the size of a small pin's head, and elevated so as to produce a considerable roughness of the skin. The papulæ are of a vivid red color, and often exhibit an irregular form, two or three of them being in many places united together; but no redness or inflammation extends to the skin in the interstices of the papulæ.

"The eruption is diffused over those parts of the body which are usually covered, as the neck, breast, arms, legs, and inside the thighs. It does not often appear on the face, excepting on the upper part of the forehead, contiguous to the hair; neither is it ever found in the palm of the hands, sole of the feet, nor on the hairy scalp. The number of the papulæ is much increased by wearing flannel, or clothes too warm and thick for the climate. When perspiration is very copious, small vesicles, containing a limpid humor, are often intermingled with the prickly heat, more especially on the breast and about the wrists; but they terminate in scales, having no disposition to ulcerate, though violently scratched. A troublesome itching attends the prickly heat, and prevents sleep during the night. There is likewise a frequent sensation of prickling, as if a number of pins were piercing the skin. This often take place suddenly after drinking a dish of tea, or any warm liquor, so as to cause the person affected to start from his seat. The eruption is in general stationary, and appears equally vivid in the day and in the night. It does not leave one part and arise on another, unless the former be much exposed to cold, and the latter be heated by additional clothing, or by friction. An increase of heat, indeed, in all cases, produces a greater number of papulæ. They sometimes disappear on a sudden, and return again as suddenly, without any obvious cause; but whenever the eruption continues for a length of time, the papulæ throw off minute scales, and are succeeded by a fresh crop, no vestiges being left in the skin. The prickly heat is in general considered as a salutary eruption; whence we are cautioned not to repel it from the skin by cold or other external applications. Such a repulsion cannot, however, be easily effected; it is certainly not produced by bathing, which has been hitherto thought highly prejudicial. A vivid eruption of the prickly heat is a proof that the person affected with it is in a good state of health, although its absence does not always indicate the contrary. The sudden disappearance of it, which frequently happens, is rather an effect than a cause of internal disorder, as of fever, or of any slight complaint of the stomach; in th latter case a temporary stimulus applied to the stomach, as by spirit tea, or other warm liquids, has the power of restoring the eruption Its appearance on the skin of persons in a state of convalescence from fevers, &c., is always a favorable sign, indicating the return of healt and of vigor.

"Various means have been employed to alleviate the itching an tingling of the prickly heat; the favorite remedy at Sierra Leone the juice of limes rubbed on the skin, which, however, has no considerable effect. I have found it of most advantage to use a light, cool dress, and to avoid the drinking of warm liquors."

Dr. James Johnson, who was a sufferer from the prickly heat, gives the following animated description of the disorder: "This unwelcome guest assails us at all, and particularly the most unseasonable hours. Many a time have I been forced to spring from table, and abandon the repast which I had scarcely touched, to writhe about in the open air for a quarter of an hour; and often have I returned to the charge with no better success against my ignoble opponent. The night affords no asylum. For some weeks after arriving in India, I seldom could obtain more than an hour's sleep at one time, before I was compelled to quit my couch with no small precipitation, and if there were any water at hand, to sluice it over me, for the purpose of allaying the inexpressible irritation. But this was productive of temporary relief only, and what was worse, a more violent paroxysm frequently succeeded."

"The sensations arising from prickly heat are perfectly indescribable, being compounded of pricking, itching, tingling, and many other feelings for which I have no appropriate appellation."

"It is usually, but not invariably, accompanied by an eruption of vivid red pimples, not larger in general than a pin's head, which spread over the breast, arms, thighs, neck, and occasionally along the forehead. This eruption often disappears in a great measure when we are sitting quiet, and the skin is cool, but no sooner do we use any exercise that brings out a perspiration, or swallow any warm or stimulating fluid, such as tea, soup, or wine, than the pimples become elevated, so as to be distinctly seen, and but too sensibly felt."

In reference to the imagined dangers of repelling the eruption, Dr. Johnson continues, "Indeed, I never saw it even repelled by the cold bath; and in my own case, as well as in many others, it seemed rather to aggravate the eruption and disagreeable sensations, especially during the glow which succeeded immersion. It certainly disappears suddenly sometimes on the accession of other diseases, but I never had reason to suppose that its disappearance occasioned them. I have tried lime-juice, hair powder, and a variety of external applications, with little or no benefit; in short, the only means which I ever saw productive of any good effect in mitigating its violence, till the constitution got assimilated to the climate, were, light clothing, temperance in eating and drinking, avoiding all exercise in the heat of the day, open bowels, and last, not least, a determined resolution to resist with stoical apathy its first attacks. To sit quiet and unmoved under its pressure is undoubtedly no easy task; but if we can only muster up fortitude enough to bear with patience the first few minutes of the assault without being roused into motion, the enemy, like the foiled tiger, will generally sneak away, and leave us victorious for the time."

The author very truly observes, that an affection similar to lichen tropicus is sometimes seen during the summer season in this country. We have ourselves suffered from its annoying attack on one or two occasions, and can add our testimony to that of Dr. Johnson.

LICHEN PLANUS.—The term lichen planus or *flat* and smooth lichen, is intended to distinguish a variety of this eruption especially remarkable for the flattening of the summit of the papule, its chronic character, and the absence of pruritus and desquamation.

The papulæ have a dull red color; they are slightly elevated, discrete, one or two lines in diameter; flattened, depressed, or umbilicated and glazed on the summit, and marked in the centre by the aperture of a follicle and the outline of its epidermic plug. Sometimes when the eruption is abundant a small cluster of neighboring papulæ are connected by an infiltrated base, and form a patch of various size; at other times the papulæ covering a large extent of surface, such as the entire length of the forearm, are connected in a similar manner; and the papulæ are sometimes so thickly clustered as to appear coherent.

At their first appearance the papulæ are always discrete, and generally remain so during their entire course. They are commonly angular at their base, corresponding in outline with the area of the lines of motion of the skin, and they increase in numbers by successive eruptions, fresh pimples cropping up in the interspaces left between their predecessors. Even in the compound patches constituted by the thickening and infiltration of the skin upon which they are developed the separate forms of the papulæ may be easily traced. The papule never enlarges by its circumference, but retains its original breadth; the production of broad patches resulting from congestion and infiltration of the integument at their base.

When the papule declines, it subsides in elevation, and at this period has somewhat of an annular character, its glazed and horny summit being depressed below the level of its circumference. The glazed summit is also remarkable for transparency and opalescence, and for the appearance, through the horny cuticle, of the aperture of a follicle surrounded by the annular outline of its epithelial lining. The total subsidence of the papule is followed by a deep brown stain; and where the eruption has been abundant, the skin is singularly speckled by these stains. In a few instances another mode of decline is perceptible, namely, the dispersion of the papule and the production of a small red desquamating patch a few times larger than its base.

In the diffused form of the eruption, resulting from a congregated assemblage of papulæ, and their conversion into a single large patch by hyperæmia, infiltration, and thickening of the skin upon which they are produced, the disease undergoes a change of character; it is more or less pruriginous, and desquamates freely like a patch of chronic eczema; but the pruritus is less in degree than occurs in the latter disease, and there is no exudation whatever.

Lichen planus is regional in its distribution; its more common sites being, the front of the forearm just above the wrist, the abdomen, the loins, the hips, the back of the sacrum, the convexity of the knee, the lower extremity, the nape of the neck, the front of the chest, the front of the forearm, and sometimes the bend of the elbow, and the axilla. In one instance, that of a lady fifty-six years of age, who had suffered from the disease for two months, the eruption appeared on the tongue, the buccal membrane, and the prolabium of the lower lip, in the form of round, white spots, having the normal size of the cutaneous papules, but without elevation; she complained of a feeling of roughness of the tongue without dryness or thirst; and the same sensation extended to the throat, making it probable that a similar state might exist in some cases in the alimentary canal, and be one of the causes of the marasmus described by Hebra.

Like other cutaneous affections, it offers certain varieties in its characters; most commonly, and always at the beginning, it is discrete in eruption, *lichen planus discretus.* Occasionally it forms diffused patches of various extent, *lichen planus diffusus;* but in this instance is always accompanied by the discrete form in other parts, and by a scattering of isolated papules in the immediate neighborhood of the conglomerate patches. In a few instances, and especially in the flexure of the elbows and hollow of the axillæ, we have found an annulate form of the eruption, resulting from the growth of the margin and subsidence of the centre of the patch, *lichen planus annulatus;* and in these cases, when a part of the circle disappears, the eruption has a marginate character, *lichen planus marginatus.* Generally, as already stated, lichen planus is remarkable for the absence of pruritus, its discovery by the patient resulting from its visible presence without any preceding irritation; but in one instance, that of a highly nervous woman, we saw it begin with itching, and the subsequent pruritus was intense and almost maddening, *lichen planus pruriginosus;* but pruritus, nevertheless, must be regarded as an exceptional symptom.

Lichen planus is always associated with symptoms of constitutional derangement, generally referable to the digestive and nutritive system, and accompanied with more or less of nervous irritability and pain. But, as a whole, the numerous patients who have come under our notice affected with this complaint, with one exception, the nervous lady already alluded to, have not seemed much out of health, and are fairly represented by the four cases which we append to this description. These cases are drawn, without selection, from patients immediately under our observation at the present time.

The question now arises, Is this the *lichen ruber* of Hebra? We believe it to be so, and that the credit of first describing it is due to that distinguished man. We have been long acquainted with the eruption, and many years back named it *planus,* in consideration of one of the most remarkable of its visual characters, namely, the flatness and glass-like smoothness of the summit of its papules; a character, as it appears to us, more striking than its redness, and one by which it would be more easily recognized by the physician. This glazed and horn-like epidermal layer retains its continuity with the rest of the epidermis, and therefore is *not a scale,* and does not usually desquamate as a scale when the papule subsides; but when it is cast off as a scale, as occurs in the infiltrated patches, the connection of its under surface with the epithelial lining of a follicle is also remarkable. Judging from Hebra's description, the disease is more deeply rooted in the constitution in Austria than it is in this country. With us it is mild, but obstinate, and ultimately yields to treatment; it produces neither emaciation nor marasmus; does not attack the skin around the joints, occasioning rhagades and interfering with their motions; and we have never seen it on the hands or feet, or causing any interference with the growth of the nails.

Hebra describes lichen ruber as presenting three stages, the definition of the three stages being as follows: 1. The papulæ; millet-sized, red, discrete, covered with little scales, not excoriated, not clustered, not general, but limited to a part, chiefly to the limbs. 2. The infiltrated patch, caused by the contact of a great number of papulæ developed close together, is of a dull red color, covered with grayish, moderately adherent scales of the thinness of paper; the scales, on removal, exhibit dilated hair-follicles; no moisture; no bleeding from slight scratching; very superficial excoriation of the surface, proving the slightness of the pruritus. However much this eruption may resemble other forms of cutaneous disease, it may always be distinguished by the character of the papulæ developed around the circumference of the infiltrated patch; and it may be seen that the patch does not owe its origin to the growth of the papulæ in circumference, but to their development in numbers. 3. As a consequence of the continued eruption of papulæ, the skin is at last wholly reddened and thickened; and the epidermis, especially its horny layer, converted into thin, grayish, yellow, easily stripped scales, without a trace of papulæ remaining. There is, besides, degeneration of the nails, restricted movement of the joints, and rhagades. The general symptoms are: arrest of nutrition, emaciation, marasmus, and unfavorable issue, particularly after a duration of years.

The following cases illustrate lichen planus as it comes before us in ordinary practice:—

CASE 1.—A merchant of the city of London, aged thirty-five, consulted us, on the 8th of March, 1866, for an eruption of lichen planus which covered the whole of the abdomen, the loins and pelvic region of the back, the outside of the hips, and the front of the forearms. He stated that the eruption had existed four months; that his attention was first drawn to it by seeing it on the abdomen; that it was unattended with inconvenience of any kind; that there was a trifling itching when he became warmed by exercise, but not sufficient to induce scratching, and none which could disturb sleep.

The eruption presented the usual characters of lichen planus, namely, papulæ, slightly elevated, flattened, or rather depressed, glazed on the summit, marked in the centre by the aperture of a follicle, discrete, smooth, and of a dull red color; their size varying between one line and two lines in diameter. In three or four situations a cluster of papulæ had become blended by infiltration of the subjacent skin, and formed a patch of irregular outline a quarter of an inch in breadth; and one spot of quadrangular figure, produced in this manner, measured half an inch in diameter. There were neither scales nor desquamation. The eruption had reached its present extent by the successive elevation of new papulæ developed in ie interspaces of the old, and the papulæ showed no tendency to in vidual increase.

He has always enjoyed a good average state of health, is occupied business every day from half-past nine until six, is regular in his bits, and has lately quitted the volunteer service on being married. is skin is swarthy, and he presents melasma oculi in a slight degree, i indication of disordered function of the digestive organs. Pre- ously to the attack of lichen planus he suffered from weight at the ecordia, nausea, and flatulent dyspepsia, and also from piles; but ese symptoms disappeared on the occurrence of the eruption.

There being no general indications to be considered, we prescribed r him our ferro-arsenical mixture, at a dose equivalent to three inims of Fowler's solution three times a-day; with the use of a lotion bichloride of mercury, two grains to the ounce, in emulsion of bitter monds, night and morning, the skin being previously thoroughly ashed with the juniper-tar soap. On the 22d of March the eruption d subsided very considerably, and as he had experienced no incon- nience from the internal medicine, we increased the dose of Fowler's lution to four mimims. On the 14th of April following, the erup- on was gone, leaving only brown stains, with which the surface was eckled over. The papulæ had subsided without desquamation, d in one place only was there a slight degree of desquamation of e cuticle.

CASE 2.—A lady, aged twenty-seven, the wife of a clergyman, has en the subject of lichen planus for four months. The eruption gan in December, 1865, by the appearance of half a dozen pimples rinkled on the front of one forearm, just above the wrist; and the mples have increased in number until they are now accumulated etty thickly on both forearms, the back of the neck, the upper part the chest, the waist, and the legs, from the lower third of the thigh wnwards. They have a dull red color; are but little elevated; e flat, and slightly depressed on the summit; glazed and opaline on e surface, and marked in the centre by the circular outline of the outh of a follicle. In some situations, as on the back of the neck d front of the chest, the smooth, horny, flat, white, and shining mmit is the most conspicuous character of the pimples, which are so smaller in this situation than elsewhere. The redness is scarcely rceptible, and these white spots look like small spangles glittering the skin; they are not scales, because they are continuous with an broken epidermis, but the corneous epidermis of which they nsist is somewhat thicker than that of the surrounding integument. On the waist numerous small clusters of papules have become ended by the congestion and infiltration of their base; and this especially remarkable in the groove produced by the pressure of e garter, the whole line of this groove being occupied by a chain such blended clusters.

The front of the forearm is occupied by a diffused blotch of these pules, united by a red and infiltrated base; the blotch occupies the ole breadth of the forearm, and extends from the bend of the elbow arly to the wrist. The blotch is slightly raised, circumscribed, un evenly papular on the surface, and covered by small scales, produced by the separation of the horny surface of the papules; while along the circumference of the blotch may be seen here and there a few scattered papulæ, marking the nature of the composition of the blotch. The blotch was formed originally by an accumulation and aggregation of distinct papulæ; and the infiltration and congestion which subsequently united the papules together and blended them, was developed only six weeks back.

After a week of treatment, many of the papulæ had subsided to the level of the integument, while their horny plates were removed, and in their place there remained deep brown stains. At this period could be seen, on different parts of the surface, the chief characteristic features of the eruption, the papulæ, the diffused blotches, and the pigmentary spots; the papulæ, some red; some almost colorless; some marked by a thin, glassy, transparent surface; and others by a thicker horny polished plate, glistening, but smaller in dimensions.

The papular eruption was wholly unattended with pruritus; but the infiltrated and desquamating patch was moderately itchy; by no means so much so as chronic eczema squamosum, to which it bears considerable resemblance, but giving forth no ichorous discharge, and a less abundance of scales.

The patient suffered much at the beginning of the eruption from general depression, both mental and physical, with neuralgia of the fifth pair of nerves; and on the occasion of her visit to us she complained of weakness and pains in the sockets of her eyes. Her complexion was muddy, her skin and conjunctiva pale, and the tongue pale and indented by the teeth.

She had no disorder of the feet or hands, or of the nails.

Case 3.—A gentleman, a student of Oxford, aged twenty-two, was attacked with an eruption of lichen planus in the beginning of February, 1866, and came under our notice towards the end of March. The eruption began as a crop of flat, red, and glazed papulæ on the hips; it then showed itself on the front of the forearms, next on the abdomen, and thence spread over the entire trunk. On the hips and forearms the eruption is discrete, intermingled with a few coherent patches a third of an inch in diameter. The abdomen has a very remarkable appearance, from being thickly studded over with small oblong coherent patches. The patches measure nearly an inch in length, by a third or a quarter of an inch in breadth, and are arranged in a transverse and oblique direction; while the intermediate spaces are sprinkled over with separate papulæ. The greater number of the patches are coated on the surface by a glazed epidermis; whilst a few are in a state of desquamation, the loosened scales being white, thin, and glistening. The skin between the patches is red and marked with fine creases, dry and pulverulent; and the whole surface is remarkable for its parched, wrinkled, pulverulent, and scaly appearance.

The eruption appeared without itching, and has been free from pruritus throughout its entire course, excepting a slight degree of irritation when the body is heated by exercise, or on the change of raiment on retiring to bed; and the parts on which irritation is felt are those in a state of desquamation.

The eruption presents the characters assigned by Hebra to lichen ruber; it begins by scattered papules, and increases in extent by the development of fresh papulæ in the interspaces between those originally produced. Every here and there a few papules become coherent, and form patches, very slightly raised and of irregular figure; frequently their base is infiltrated, and the patch is cemented by a ground of redness. An extension of this process gives rise to diffused blotches of considerable extent, sometimes covering a large portion of a limb. The individual papules are flattened and glazed, slightly depressed in the centre, and marked by the aperture of a follicle; but the epidermis is continuous with that of the surrounding skin; there is no tendency to desquamation. When, however, a cluster of pimples or a number of patches are blended together by an infiltrated base, the glazed summit of the papules is apt to desquamate, and a succession of thin, glistening, white scales are produced in its place. The scales are much thinner than those of alphos, even when accumulated, as sometimes happens. They are purely epidermal, not composed in part of desiccated secretions, like those of squamous eczema, and, unlike alphos, are more abundant on the centre of a patch than at the circumference. And the eruption, in its diffused form, though resembling, in some respects, chronic eczema and alphos, is unlike both, but more like the latter than the former, and might be mistaken for an erythematous alphos.

Our patient is of nervous temperament and feeble constitution; he had a little eczema from dentition in his infancy, but has been free from all cutaneous ailment since until the present attack, and of late years has been gaining in health and strength. Four months before the present attack of eruption he was suffering from debility, and a few weeks later became the subject of epistaxis, which lasted for several days. At present he is moderately well; his functions are properly performed; he can apply himself to his studies without feeling them irksome, but he is a little weak. He has no affection of his hands, feet, or nails.

CASE 4.—A lady, aged fifty-seven, has been the subject of lichen planus for six years, the eruption being situated on the front of the wrists, in the flexure of the elbows, in the axillæ, and, in a marginate form, around the whole circumference of the perineum, vulva, and anus.

On the front of the wrists there are a few scattered papulæ, while in the other regions the papulæ have assumed a centrifugal and marginate character, forming rings of irregular figure, inclosing an area of sound skin, upon which the papulæ have subsided and disappeared. The most remarkable character of the eruption in this long-standing case, is the thickness and hardness and whiteness of the parchment-like epidermic layer of the papules. On the wrists, the white, opaque, epidermic plate is surrounded by a border of redness. In the flexure of the forearms it forms nearly continuous rings, with very little redness. Around the perineum, and in the groins, the thick white epidermic layer constituted a band a quarter of an inch in breadth, feeling stiff and uneasy on sitting, as though a piece of dry parchment were inserted in the skin. The area of the rings in the flexure of the elbows and axillæ is thin and pale, from defective nutrition of the skin; while that of the perineum is stained with brown pigment, and roughened by the concretion of a seborrhœal exudation. Very little pruritus has attended the eruption, and there is no affection of the hands, feet, or nails.

The patient refers her disorder to "change of life." About ten years back she suffered severely from pruritus vaginæ; and when the pruritus subsided, an eruption appeared upon the outer part of the vulva and in the groins, apparently an eczema. The lichen planus is a subsequent occurrence, and lately she has experienced a troublesome feeling of pruritus of the front of the chest.

LICHEN SCROFULOSORUM is a variety of lichen unknown to ourselves, but described by Hebra. His definition of the disease is as follows:—

1. Papulæ, size of millet-seed, pale yellowish-red, discrete, but congregated in clusters, covered with small scales, not excoriated, occurring on the trunk of the body only. 2. The clustered grouping of the papulæ continues through the whole course of the disease; and even if several new papulæ spring up in the circumference of the elder groups, and blend with them, still, in other spots, new groups will be found with the old characters, or the elder groups themselves remain separated from each other by considerable spaces of healthy skin; also it is often seen that while new papulæ are developed in the periphery of the groups, those in the centre fade and become flat, and eventually are converted into punctiform, yellowish or yellowish-brown, tawny pigmentary spots, encircling the hair-follicles. There is no pruritus, consequently no excoriation. 3. Never spreads out to the extent of lichen ruber, and exhibits a strong differential diagnosis; for example, swelling of lymphatic glands, especially cervical; or periostitis, ulceration of bone or skin, with a puffed cachectic countenance.

LICHEN PILARIS (Plate XI. B).—We have seen that lichen has its pathological seat in the follicles of the skin; we are therefore prepared to find a modification of the papules bearing relation to the size or closeness of distribution of the follicles. Thus, on the trunk of the body the papulæ are small; on the limbs they are coarser; while on the scalp, where the largest follicles exist, papules are almost wholly wanting. On the limbs, and particularly on the lower limbs, we sometimes meet with papules which surround the hairs at their escape from the follicles, so that the hairs have the appearance of growing out of the papules: this is lichen pilaris; and its occurrence is evidently due to a physiological cause. Lichen pilaris is therefore nothing more than a lichen simplex developed on the limbs, and especially the lower limbs, in relation with the abundant hairs and coarser follicles which are found in that region.

LICHEN LIVIDUS.—In peculiar states of the constitution, the circulation in the papules is so sluggish that the venous change of the blood has time to take place in the congested vessels, and the papules have consequently a purple or livid hue. This alteration of color is most commonly met with in the lower extremities, where the papules are usually of large size; and we have seen it in persons enjoying an average state of health, and surrounded by the comforts and even luxuries of life. It is not necessarily a disorder of the squalid and the ill-fed; although sometimes associated with the petechiæ of purpura and other indications of a cachectic habit. Lichen lividus is therefore a lichen simplex, accompanied with a torpid circulation through the cutaneous vessels.

Lichen circinatus (Plate XI. F) is a modification of lichen circumscriptus, occasioned by the subsidence and dispersion of the papules in the middle of the patch; and commonly by the extension at the same time of those of the circumference. The patch is thereby converted into a ring, with a border of varying breadth, and may run on to a considerable size.[1] At other times the ring is broken at one point, and the extension takes place irregularly by the remainder of the segment; or the patch runs on in a longitudinal direction to a considerable length, and is more or less tortuous in its course.

Lichen circinatus serpiginosus[2] is another form of the circinate, or annulate variety of lichen; its special characters being, the development of rings in considerable numbers, generally upon the breast or back; and the rapid spreading of the rings, so that they run together, and form one broad and extensive patch, upon and around which the more or less complete or interrupted markings of its component circles may be traced. This eruption is attended with very considerable itching, is chronic in its nature, and succeeded by a furfuraceous exfoliation of the epidermis.

The eruption commences by lichenous pimples, which, subsiding at the summit and spreading at the base, are speedily converted into small, flat, erythematous disks, bounded by a sharp and distinct margin. These disks, about half an inch in diameter, throw up at their edges, at one, two, or three points, several bright red pimples, and, increasing in size to the diameter of one or two inches, are converted into rings. When the centrifugal growth is equally active on all sides, the ring remains circular, and the margin is formed by a row of pimples more or less complete; sometimes the row of pimples is broken at several points, sometimes they are ranged only on one side of the circle, and at other times they are entirely absent, and the margin is formed by a simple ridge, along the summit of which the cuticle has become fissured (erythema marginatum). Bateman observes, that "the erythema marginatum occurs in patches which are bounded on one side by a hard, elevated, tortuous, red border, in some places obscurely papulated; but the redness has no regular boundary on the open side." When the pimples are developed only on one side of the circle so as to form a crescentic rim, the ring is apt to increase chiefly by this side, and becomes more or less oblong; and when the pimples constitute several broken rows the ring is still more irregular. Increasing in this way, and by a portion only of the periphery of the ring, the rest of the ring is apt to be lost, and then only a portion of the margin remaining, the title of *lichen marginatus* is not inapplicable. Or, when portions of several circles are more or less connected with each other, so as to form an uneven line of some extent, we find an explanation of the term *lichen gyratus*, assigned by Biett to a narrow tortuous band composed of lichenous papules.

---

[1] The description of papulæ by Celsus harmonizes remarkably with this description. "There are," he says, "two kinds of papulæ," that is, papular eruption; "in one, the skin is roughened, with very small pustules (*i. e.*, pimples); is red and slightly eroded; the eruption being somewhat smoother in the middle than at the circumference, and spreads slowly. This kind begins for the most part as a circular eruption, and spreads by the border."

[2] Portraits of diseases of the skin (Plate X. A D).

The area of the rings has a yellowish tint of color, and the cuticle covering it is slightly corrugated and dry, and sometimes the seat of a mealy exfoliation. In other respects, the area is uniform and smooth, and rarely presents any trace of pimples. Along the line of the margin, on both sides of the base of the papular ridge, the cuticle is commonly broken, and presents a thin free edge.

LICHEN GYRATUS is a term given by Biett to the convoluted figures assumed by lichen circinatus, when the rings are broken and assume irregular shapes. Cazenave and Schedel mention an example of this disease as occurring at St. Louis, "the papulæ collected into little groups, formed a kind of ribbon, which, commencing on the front of the chest, curved downwards along the inner border of the arm, and continued onwards, precisely in the direction of the course of the ulnar nerve, to the little finger. Rayer remarks, that he has seen it form "a kind of collar in front of the neck, extending from one ear across to the other." Both lichen circinatus and lichen gyratus, are simply alterations in figure of lichen circumscriptus.

DIAGNOSIS.—Lichen, being a pimple, cannot be confounded with any other pathological lesion; if, associated with the papular eruption, there be other pathological lesions present, such as erythema, vesicles, disruption of the cuticle, or exudation, the case is no longer one of lichen, but an eczema papulosum; although, a few scattered vesicles on parts of the skin, while the chief extent of the eruption is papular, is not inconsistent with the diagnosis of the eruption as one of lichen. When, with the papular eruption, there are indications of the presence of the acarus in the cuticle of the hands, the case is scabies; and where the itching is violent and intense, the pimples are wanting, and other indications exist of an unhealthy nutrition and innervation of the skin, the disease is prurigo.

The diagnosis of lichen planus turns upon the presence of the flattened, and depressed, and glazed summit of the papulæ, when the latter are discrete and isolated, as they commonly are; and upon the discovery of similar papules around the infiltrated patches, or on other parts of the body, when the eruption assumes the infiltrated and diffused form. Other important signs of the disorder are, the slight pruritus; absence of marks of scratching and exudation; connexion of the horny lamina and scale with the epithelium of the follicle; patency of the follicle when the lamina is removed; and p brown stain left upon the skin at the decline of the papule. The ption may be mistaken for chronic eczema, unless we remember e absence of secretion and pruritus; and for alphos, unless we bear mind the distinction between the peculiar, glazed, thin, transparent, orny covering of lichen planus, as compared with the thick, spongy, paque, and white scale of alphos. Moreover, the papules of alphos grow by the circumference, which the papules of lichen planus never do; and the diffused patches of alphos are more prominent than those of lichen planus, and more disposed to bleed on scratching.

Cause.—The cause of lichen is identical with that which gives rise to eczema, namely, *debility*; the difference in the form of the eruption being due to constitution and temperament. Where the temperament is lymphatic, eczema will be developed; while in a bilious, and especially in a nervous temperament, the eruption will be lichen; the essential differences between them being the difference of *moist* and *dry*; the latter being associated with a greater degree of irritability of the nervous system. The kinds of debility also resemble those of eczema, namely, nutritive, assimilative, nervous, and local; while the remote predisposing causes are: cutaneous irritability, the sequel of scabies; deranged digestion; coldness of season and climate; errors of diet; errors of air and exercise; the eczematous diathesis; vaccination; dentition; and excessive lactation. With regard to strophulus, Bateman remarks that it arises from an "irritability of the skin at that period of life when the constitution" is easily "disturbed by irritation, either in the alimentary canal, the gums, or other parts."

Prognosis.—Lichen is by no means serious, and is only of importance from the irritable pruritus by which it is accompanied, and which, by destroying rest, tends to weaken the system and to produce general disorder of the economy. It is usually a milder malady than eczema, particularly the local forms, and of shorter duration, lasting, commonly, only a few weeks, but sometimes prolonged for several months, and even for years. The time of life at which it is most frequently met with is childhood and maturity; but it is also observed at other periods. Lichen strophulosus is an eruption of infants, and lichen urticatus is met with chiefly in young children.

Treatment.—The constitutional treatment of lichen requires the mildest aperients to regulate the digestive organs and secretions, followed by bitters and the mineral acids, by chalybeates, by quinine, or by quinine and iron. In chronic cases, arsenic, as prescribed for eczema, will generally effect a cure.

The internal remedies recommended by Bateman for strophulus are, gentle laxatives, when any feverishness is present, followed by decoction of bark, or chalybeates; of the latter, he particularly favors the tartrate of iron. Doubtless, had the superphosphate been in use in his day, he might have given it a preference, as being peculiarly suitable to children. With the internal treatment he enjoins, a carefully selected diet, proper exercise, and the use of ablutions with tepid water, plain and with the addition of milk. He likewise expresses an old-fashioned dread of repercussion of the eruption from exposure to cold draughts of air, or the use of cold water, and he suggests that in such an event we should administer some slight cordial, such as a few drops of sal volatile, and apply a blister externally. At the present day we prefer the stimulus of mustard to that of cantharides for the skin of infants, or frictions with a mildly stimulating liniment, such as cajeput oil or the oleum sinapis with soap liniment.

Our treatment of lichen planus, and that which we find most successful, is the ferro-arsenical mixture; and as a local application, the bichloride of mercury in lotion; or the solution of the pentesulphide of calcium. Hebra has found no remedy serviceable in lichen ruber with the exception of arsenic.

The *local treatment* of lichen calls for the use of ablutions with the juniper-tar soap, tepid bathing, and anti-pruriginous and moderately stimulating lotions, such as an emulsion of bitter almonds with hydrocyanic acid, or with bichloride of mercury and spirits of wine; or a lotion of carbolic acid. But the most certain and powerful anti-pruriginous lotion is one composed of the pyroligneous oil of juniper, spirits of wine (of each an ounce), and water (six ounces). The latter remedy is very successful in lichen urticatus. When lichen circumscriptus is obstinate, it may be dispersed by gentle friction with the ammonio-chloride, or nitric oxide of mercury ointment; but with the unguentum picis liquidæ.

In the treatment of prurigo, baths are of much value, and should be used daily. The temperature of the baths must not be higher than ninety degrees, and they may consist of simple water with soap, the alkaline, or sulphur bath. When the daily use of the alkaline or sulphur bath is found to irritate the skin, it should be alternated with the simple soap-bath. The cold-water bath and sea-bathing may also be found useful in restoring the tone of the nervous system and skin, and promoting recovery.

With a view of exciting a new action in the diseased skin, and modifying its morbid condition, stimulating applications, such as the tincture of croton, either pure or diluted with an equal part of spirit of rosemary, may be prescribed. Previously to the use of the croton, the skin should be prepared by repeated frictions with a damp sponge dipped in fine oatmeal, and then washed; and after the decline of the eruption which the croton excites, the frictions with oatmeal should be continued. After a few applications of the croton in this way, the bichloride of mercury in almond emulsion, in the proportion of five or ten grains to the half-pint, will often complete the cure. We have also seen considerable benefit result from the use of the tincture of iodine painted on the morbid surface. Another local remedy frequently of service in allaying the itching of prurigo senilis, is glycerine, applied by means of a sponge.

The applications best suited for the temporary relief of pruritus are, vinegar, lemon-juice, weak solution of bichloride of mercury, tincture and watery solution of opium, creasote ointment and lotion, tar ointment, and especially that of the juniper tar, ointment of opium with camphor, the diluted nitrate of mercury ointment, ointment of lime, ointment of cyanide of potassium, lotion of hydrocyanic acid, aconite, acetate of ammonia, muriate of ammonia, sulphuret of potash, chlorate of soda, &c. It is always necessary, as well as desirable, to have a number of anti-pruritic remedies at hand; for it frequently happens that one may be successful while all the rest fail, and it is constantly found that a remedy which may be perfectly effectual for this purpose in one case may be utterly useless in the next; we subjoin several formulæ recommended by French dermatologists, and quoted by Gibert. One of these is an ointment consisting of hydrate of lime, ʒij; subcarbonate of soda, laudanum, āā ʒss; and lard, ℥j. An anti-pruriginous ointment recommended by Alibert is as follows: Laudanum, sublimed sulphur, āā ʒss; oxide of zinc, ʒj; oil of almonds, ʒj; lard, ℥iij. Biett employed successfully, for an obstinate prurigo of the hands: cinnabar, laudanum, āā ʒij; sublimed sulphur, ℥ss; lard, ℥v. And for local prurigo, the following was found of service: muriate of ammonia, ʒj; powder of white hellebore, ℥ss; lard, ℥iij.

IMPETIGO.

Syn. *Ecpyesis impetigo*, Mason Good; *psydracia; melitagra; dartre crustacée flavescente*, Alibert; *crusted tetter or scall.*

IMPETIGO is a Latin term, derived, according to Pliny, *ab impetu, impetu agens*, acting with force, with severity, and conveying the idea of a more energetic form of inflammation than that which accompanies the two preceding affections, eczema and lichen. Eczema, as we have seen, is essentially an exudative, a lymphatic, or a moist affection, an affection in which the exuded material is a serous lymph; lichen is a dry affection, without exudation, but with an excrement of pruritic irritation; while impetigo must be regarded as representing the pyogenic or purulent element. These terms are purely arbitrary, and therefore arises the great necessity for making them definite. Eczema conveys in its meaning no idea of exudation; lichen, no idea of solidity and pruritus; and as little does impetigo any notion of pus-formation. Moreover, in eczema we find all the three affections combined: with exudation in one part, there are lichenous papules in another, and impetiginous pustules in a third; and to express the combination dermopathologists have invented the compound terms, eczema lichenodes, or eczema papulosum, and eczema impetiginodes, or eczema pustulosum.

If we turn to our authorities, we discover another argument for precision of definition. The impetigo of Celsus is throughout an eczema;[1]

---

[1] "Of impetigo there are four species: The milder kind resembles scabies (eczema); it is attended with hardness of the skin, redness, ulceration, and erosion. It differs from scabies (eczema) in a more extensive erosion, and in the presence of pustules similar to the pimples of acne (vari); it is also accompanied with large vesicles (bullulæ), which in course of time are converted into small scales. The disease is apt to recur at certain periods of the year.

"Another kind is more severe, almost like a papula, but more rough and red, and presenting a variety of figure. It throws off superficial scales; there is more erosion; it spreads more quickly and extensively; and is more regular in its periods both of recurrence and cure than the preceding species. It is termed *impetigo rubra.*

"The third kind is even more severe than the last; the skin is more thickened; it is harder and more swollen; the surface of the skin is cracked, and more violently eroded; it is covered with scales of a black color; is more regular in its periods he gives us no hint of any distinction dependent on the presence of pus. The impetigo of Willan, although founded on the notion of pus, fails to make the pustule definite, and embraces every form of eczema in which a purulent or muco-purulent secretion prevails. Hence the necessity of representing these distinctions each by a substantive malady; namely, eczema, the impersonation of sero-lymphatic exudation; lichen, the impersonation of the solid, and dry, and itchy papule; and impetigo, the impersonation of pus, or of a purulent secretion; and establishing an identity between eczematous and vesiculous, or more properly, exudative; between lichenous and papulous; and between impetiginous and pustulous. There remains, however, this further and very important distinction, that eczema, being the mother disease, embraces in itself all the papulæ and pustulæ which may chance to be associated with it; whereas, the term lichen is to be strictly limited to papulæ without vesicles, exudation, or pustules; and impetigo, to pustulæ without vesicles, exudation or papules. By this arrangement we gain precision; and we gain confidence in the use of the language of our science, an important consideration.

IMPETIGO (Plate X. A–F) is an inflammation of the skin, accompanied with the formation of pus, which raises the cuticle into small pustules. The redness is more or less vivid; there is some swelling; the pus is light-colored and of the kind termed sero-purulent; but may present every tint of yellow in its hue; and dries up in a grayish or amber-colored crust. The crust remains adherent for several days, and at its fall leaves the skin red and shining, but without any permanent mark or scar. The eruption is non-contagious, like its congeners eczema and lichen, and is unattended with special constitutional symptoms.

The absence of cicatrix marks the fact of the superficial operation of the inflammation, and affords evidence that the pus is not generated at the expense of the vascular tissues of the skin, but is simply a morbid transformation of the newly-formed cells of the rete mucosum. Indeed, it would be incorrect to regard the pustule of impetigo as a true pustule, such as that of ecthyma or variola; the latter is the result of a destructive alteration of the cutaneous tissue, and consequently leaves behind it a permanent cicatrix; the former being a mere modification of the serous vesicle, a vesicle, in fact, containing a sero-purulent fluid. Hence, it is no uncommon phenomenon to see one of these sero-pustules, of larger size than usual, surrounded by several coherent vesicles, which invest it in a circle, and form together a small composite patch. The reading of such an appearance is briefly this, an energetic burst of inflammatory action in the produc-

---

both of occurrence and decline, but is not completely curable. This is the *impetigo nigra*.

"The fourth kind is wholly incurable; it differs in color from the others; it is whitish, and resembles a recent cicatrix; it throws off light-colored scales, sometimes whitish, sometimes lentil-colored (yellowish); and often, when the scales are removed, blood issues from the diseased skin. Otherwise the humor is colorless, the skin hard and fissured, and the disease extensively spread out.

"All these affections occur chiefly in the feet and hands, and also attack the nails."

on of the primary or central pustule, and a weakening of energy in e formation of the secondary, the circumtangent, and subordinate vesicles.

The pustule of impetigo is of the kind termed *psydracium*, and in the plural *psydracia* (ψυχρα ὑδρακια, *frigidæ guttulæ*), that is, a pustule or pustules produced with little heat or inflammation, commonly aggregated or confluent, and, after the discharge of their pus, pouring out "a thin, watery humor, which frequently forms an irregular incrustation."

Impetigo is an affection indicative of a lower grade of vitality than eczema or lichen, and is met with most frequently in persons of cachectic habit, and particularly in children and women. It is rare as compared with the former affections; and is more commonly seen amongst the poor, and in workhouses, than in the middle rank of society.

THE VARIETIES of impetigo are two in number, namely, impetigo figurata and impetigo sparsa; the former indicating a state of aggregation of the pustules, the latter their dispersion. To these Willan added three others, namely, erysipelatodes, scabida, and rodens, of which the first and second evidently belong to eczema, the third being a syphilitic ulceration. An impetigo capitis, formerly admitted by ourselves, must also be transferred to eczema capitis.

IMPETIGO FIGURATA (Plate X. A B) appears in the form of clusters of small pustules developed upon a more or less inflamed and swollen ground, and forming a circumscribed and often circular patch. There may be several of these patches on the trunk of the body or limbs; but they are most frequently observed on the face, and particularly around the mouth. They are often chronic, and often successive in their occurrence.

IMPETIGO SPARSA (Plate X. C) is the scattered form of the eruption. The pustules appear singly or in smaller cluster than in impetigo figurata, and are dispersed over the whole body, being not unfrequently met with, in children, on the hands and feet.

The impetigo sparsa very commonly presents on certain parts of the body, and especially upon the hands and feet of children, the characters before referred to of a central pustule with a surrounding circle of confluent vesicles or phlyctenæ. This form is so frequent that we have thought it deserving of a separate designation, and we have named it *impetigo phlyctenodes*.

DIAGNOSIS.—The pustules with which impetigo may be confounded are ecthyma and modified variola; the characters of distinction, however, are sufficiently obvious. The small congregated sero-pustules of impetigo standing upon a slightly swollen but not much inflamed ground, are in striking contrast with the large, well-formed, deep yellow, solitary semiglobes, with inflamed and hardened base, of ecthyma; the former a psydracious, the latter a phlyzacious pustule; the former disappearing without leaving a trace behind, the latter leaving a cicatrized pit of greater or less permanence. Modified variola when mild in its eruption, and appearing chiefly on the face and hands, in the form of sero-pustules, is very much like impetigo;

but a few days put an end to the doubt, even when the constitutional symptoms of variola are too slight to attract special attention.

CAUSE.—The cause of impetigo, as of the other eczematous affections, is debility; the debility being chiefly of the nutritive kind, and the most prominent of the remote predisposing causes are, general cachexia, bad ventilation and drainage, errors of diet, and the after-irritation of scabies.

PROGNOSIS.—Impetigo is not a serious affection; but as it betokens constitutional debility, a pyogenic diathesis, and a tendency to cachexia, might possibly lay the foundation of a more grave disturbance of health, if not speedily and effectually checked.

TREATMENT.—The indications for treatment are the same as those which are applicable to the previous forms of eczematous affection, and the remedies of a similar class: the regulation of the digestive and secreting organs when they are found to be faulty, and the succession of bitters with the mineral acids, chalybeates with the mineral acids, quinine, and, where the disease assumes a chronic character, the ferro-arsenical mixture, or one of the other forms of arsenic.

The *local* treatment should be similar to that for eczema: saturnine lotions if there be much heat, and subsequent dressing with a cerate of acetate of lead; or the benzoated ointment of oxide of zinc with spirits of wine; lastly, in the squamous stage of the eruption, ablutions with the juniper tar soap and slight inunction with the benzoated ointment of oxide of zinc, or one of the mercurial ointments considerably diluted (ʒij ad ℥j). Where ointments are unsuitable we must trust to lotions, and dredging with a desiccative powder, such as the pulvis cinchonæ, or oxide of zinc and calamine, of each one drachm, diluted with six drachms of powder of starch.

GUTTA ROSACEA.

Syn. *Acne rosacea; gutta rosea; ionthus corymbifer*, Mason Good; *bacchia; rosy-drop.*

GUTTA ROSACEA[1] (Plate XIV. H) has heretofore been confounded with acne, under the name of acne rosacea; we shall endeavor to show that the two diseases are essentially different. Gutta rosacea is the red and pimply face of the mid-period of life, a disease of inflammatory congestion, and depending on constitutional causes; acne is a disorder of secretion, of nutrition, of growth, and an accompaniment of youth and the development of the cutaneous tissues.

Gutta rosacea is an inflammatory congestion of the skin of the face, accompanied with erythematous patches, red spots, papulæ sometimes small and sometimes large, pustules, and tubercular thickening of the integument. It is chronic and progressive in its course, and the greater or less development of its pathological signs constitutes its varieties; for example, gutta rosacea erythematosa, papulosa, tuberculosa, and pustulosa.[2]

---

[1] Portraits of diseases of the skin (Plate XL. A P).

[2] Gutta rosacea, according to Plenck, is a genus of the class maculæ; his definition of the term being "corymbus macularum rubrarum in facie et naso." The genus comprises nine species, *e. g.:* simplex, œnopotarum seu bacchia, hydropotarum, febrilis, pernionalis, herpetica, syphilitica, lac[illegible] variolosa.

Gutta rosacea makes its beginning with simple flushes of the face, which are transient; they are produced under the influence of the stimulus of food, commonly at dinner, and sometimes of emotion. These flushes, at first occasional, soon become habitual, and, frequently repeated, they give rise to a permanent distension of the vascular plexus of the skin, and the red face is established. This is the erythematous stage of the affection, and in conformity with the degree of congestion and the energy of the circulating power, we find certain obvious modifications. At first, and in persons of firm tissue and healthy muscular system, the cutaneous circulation is vigorous, and the color of the skin has the scarlet tint of arterial blood; after a time, months probably or years, or in a person possessing soft tissues and weakly muscular power, the circulation is languid, the blood undergoes its venous transformation in the skin, and the tint of redness is changed to crimson, purplish, or roseate, and occasionally also becomes livid. It is the frequency of this alteration of color that has suggested the term "rosacea," applied to the disorder; but it will be seen that the roseate hue is by no means a necessary accompaniment of the affection, and, when it exists, represents an advanced stage of the morbid process.

We have previously directed attention to the deep circulation of the skin, the follicular circulation, as compared with the surface circulation; this difference is conspicuous in every congestion of the skin, and is sometimes very striking in gutta rosacea. Congestion of the follicular circulation is known by a dotted or punctated appearance in the skin (gutta rosacea punctata), each dot corresponding with a separate follicle; and the presence of these dots is the indication of a commencing development of papulæ (gutta rosacea papulosa), the papulæ having the same origin and structure as those of eczema or lichen. An accumulation of papulæ at some one point produces the more extensive rising known as a tubercle (gutta rosacea tuberculosa), and the formation of pus in the summit of a papule or tubercle constitutes the pustular form of the disease, or gutta rosacea pustulosa.

Gutta rosacea is attended with sensations of heat, burning, itching, and, in the pustular form, lancination and throbbing. When the pimples are rubbed or scratched, a little serous lymph oozes from their summit and forms a small crust; but there is never the amount of exudation which exists in eczema, and, as a consequence, never the same thickness of crust.

Gutta rosacea, in a chronic form, necessarily occasions considerable thickening of the skin of the face, and in aggravated cases produces those unsightly blotches and tubercles which have been noted by Shakspeare:—

> "His face is all bubukles and whelks and knobs, and flames of fire."

From its occasional association with habits of intemperance, it has been termed "Bacchia," and the tubercles "grog-blossoms" and "carbuncles." And when the nose is the seat of the disease, the whole organ is swollen, and the end of the nose thickened and hypertrophied, marked by large superficial veins, often very blue or livid, and studded with yellow pustules and ugly crusts.

The characters already described bring gutta rosacea into the category of eczematous affections; namely, the kind of eruption; its tendency to exudation, although in a slight degree; its development in the form of a rash or an eruption; and we may add, its dependence on constitutional causes. We have frequently seen it associated with eczema existing in other parts of the body, and in persons possessing the eczematous diathesis. It is essentially a chronic affection, lasting, when not restrained by treatment, for years. It has no constitutional symptoms of its own, and is obviously non-contagious.

It is more frequent than would be imagined, occurring in private practice once at least in every ten patients: it is nearly six times more frequent in the female than in the male, and is commoner in the unmarried female than in the married.[1]

Diagnosis.—Gutta rosacea may be mistaken for an eczema erythematosum and papulosum, for a lichen, or for an impetigo; but the general history of the affection will determine its identity; in a practical point of view, the blunder is not of much consequence, for the treatment is the same. With regard to acne, it is to be borne in mind that the latter disorder is one of torpid glandular action, accumulation of altered sebaceous substance in the gland and its follicle, and inflammation resulting from the mechanical pressure and irritation caused by the impacted matter. Moreover, it is commonly associated with other indications of disordered function of the sebaceous glands and follicles, and occurs in young persons, beginning at the age of puberty. Whereas gutta rosacea is a disease of middle life, has little of the sebaceous complications referred to above, is primary instead of secondary in its inflammatory congestion, and is the consequence of general ailment and disorder of the economy.

Cause.—The cause of gutta rosacea is similar to that of the eczematous affections already enumerated, namely, *debility;* debility which is nutritive, assimilative, nervous, or local, or all, in greater or less proportion, combined. The eruption is excited by reflex irritation, originating in the nervous plexuses of the stomach and organs of digestion, and also in the reproductive and uterine system. And the remote predisposing causes are as follows: uterine, reproductive, and puerperal derangements; deranged menstruation; languid vital power; anxiety, fatigue, and affliction; loss of rest; deranged digestion; abuse of alcoholic drinks; ungenial climate; errors of air, exercise, and clothing; constitutional and organic disease; rheumatic diathesis; hemorrhage; eruptive fevers; rapid growth; sexual excess; excessive mental and physical labor; deficient food; adult vaccination: syphilitic cachexia, &c. A common local cause is neglect of the use of soap in the daily matinal ablution.

Prognosis.—Not grave; but as the local disease implies a derangement of general health, in which digestion and nutrition, as well as physical comfort and mental ease, are concerned, it cannot too soon be relieved; and were there wanting an additional reason for prompt treatment, it might be found in the fact that the disease is more difficult of removal when confirmed by time and neglect. And this is the more apt to be the case from the fact that gutta rosacea is too frequently looked upon as a deformity rather than as a disease, and as affecting vanity rather than life.

---

[1] *Vide* An Enquiry into the relative Frequency, the Duration, and Cause of Diseases of the Skin, 1864.

TREATMENT.—There is no disease more amenable to treatment than is gutta rosacea, when properly understood. As a disease of debility, the first indication is to improve the tone of the system and restore the general health; as a preliminary to the tonic course, the digestive organs will require to be regulated, the secretions to be set right; and when the ordinary tonics, bitters, mineral acids, and chalybeates, have exhausted their good effects, we may have recourse to the unfailing specific influence of arsenic.

The *local* treatment should be mildly stimulant and soothing, and afterwards more stimulating. Our plan is to prescribe daily, and sometimes twice daily, washing with cold water and the juniper-tar or carbolic acid soap. If the local irritation be increased by these means, we omit the evening ablution, and apply the benzoated ointment of oxide of zinc, or smear the ointment gently on the face after the evening ablution. Then, if the congestion of the skin be relieved by this process, we follow it up by a stronger stimulant, the compound hypochloride of sulphur ointment. The latter ointment should be rubbed into the pimples with moderately firm friction at bedtime, left on the skin during the night, and washed off in the morning by the usual ablution with the juniper-tar soap and cold water. This plan is generally successful; but if it be found too severe, we modify it accordingly, and have recourse to milder cutaneous stimulants, such as the bichloride of mercury in emulsion of bitter almonds. In very obstinate cases we prescribe an ointment of the iodide of sulphur, ten grains to the ounce of benzoated lard.

SCABIES.

Syn. *Itch. Scabies papuliformis; papularis; vesiculosa; vesicularis; lymphatica; pustulans; pustulosa; purulenta; ulcerans; cachectica;* Willan. *Scabies vermicularis,* Sauvages. *Ecpyesis scabies,* Mason Good. *Gale,* Fran. *Kraetze,* Germ.

SCABIES is an affection of the skin, characterized by scaliness of the epidermis, by erythematous redness, papules, vesicles, and in some cases by pustules; to which may be added, excoriations, accidental abrasions, and scratches produced by the nails.[1] It is accompanied with excessive itching, the itching being augmented by warmth, and especially by the heat of bed.

The above appearances are due to the presence in the skin of a minute animalcule, the acarus scabiei, which burrows within the epidermis, and excites irritation in the papillary surface of the derma. The burrowing of this little creature gives rise to the *scaliness* (scabrities) and undermined state of the epidermis. The vesicles, which are few and scattered, bearing no proportion to the number of acari, and little relation to their seat, present some differences in form and character, resulting from their position. Thus, in the thin epidermis of the lateral surfaces of the fingers they are conical and acuminated; on the wrists and other parts of the body they are frequently more or less rounded, and resemble the vesicles of eczema; while in the latter situations they are also variable in size. The vesicles differ in reference to their contents; in those of a conical form, the contained fluid is transparent and viscous; in the rounded vesicle the fluid is also transparent, but in some it is more or less opaque and puriform. The pustules are present only in severe cases, or in persons with an extremely sensitive skin, for example, in children; they are generally psydracious, and vary in size, from the small pustule of impetigo, to the larger pustule of ecthyma.

---

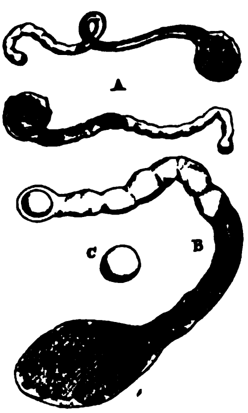
[1] Portraits of diseases of the skin; Plate XVII. A A, in which a good example of scabies is shown.

When one of the early vesicles of scabies is examined with attention, a minute spot or streak may be observed upon some one point of its surface. This is the aperture originally made by the animalcule on its first entrance within the epidermis, and from this spot or streak a whitish fluted line may be traced either in a straight or a curved direction, into the neighboring epidermis. The whitish line is the *cuniculus*, or burrow of the acarus; it necessarily varies in length, being sometimes as much as five or six lines in extent, and at its termination, under a slightly raised dome-shaped elevation, the little creature lies concealed. The acarus may be distinguished easily by the experienced eye as a small dark crescent, or as a minute white glistening orb, with a dark crescentic edge, at the end of the cuniculus, and if the thin dome-shaped capsule of epidermis be raised in this situation, with the point of a needle, the animalcule is brought into view.

The spot or streak which is here described is not met with on all the vesicles, for the same animal may excite a number of these in the vicinity of its habitation, while in the primitive vesicle alone—that formed by the entrance of the acarus—can the trace of its entrance be expected. The aperture, again, does not communicate with the interior of the vesicle; it is the too close neighborhood of the animalcule that acts as the cause of formation of the vesicle; the acarus scabiei is *never* situated within the vesicle or within the pustule, and there is no communication between the vesicle and the cuniculus.

At a later period it is no uncommon thing to find at one extremity of the cuniculus the marginal outline of the base of the vesicle, while at the other end is the little dome under which the acarus is imbedded. The accompanying sketch is intended to illustrate this appearance, the cuniculi (A) being about twice the natural size. The vesicular end of the cuniculus is a mere outline bounded by the broken edge of cuticle which formed the base of the vesicle, the rest of the vesicle having been removed by attrition and desiccation. The next portion of the cuniculus, for about half its length, was an open groove with a ragged border, while the remainder of the cuniculus was an arched canal or tunnel, somewhat expanded from point to point, where the animal made its temporary rest in its mole-like progression. In the magnified figure (B) the acarus is seen at the end of the cuniculus; it resembles a white and pearl-like glistening globule capped on its anterior border, or that which is nearest the end of the cuniculus, with a reddish-brown crescent; the colored crescent being the chytinous investment of the head and anterior legs. Figure C represents the acarus removed from the cuniculus, and its appearance when seen with the naked eye through the thin convex plate of cuticle which covers it as with a watch-glass.

Fig. H.



The vesicle at the beginning of the cuniculus is not, however, a constant occurrence; very commonly there is no other trace of the commencement of the burrow than a double line of ragged border, and neither papule nor vesicle in its immediate vicinity; and the cuniculus itself, which is pathognomonic of scabies, is simply the dwelling and nest of the fecundated female, which pushes on her tunnel by short and pretty regular stages, and deposits her ova at each halt. The unimpregnated female digs short burrows for her temporary abode, which are scarcely appreciable with the aid of a common lens; and the male, who shifts his position every night, contents himself with the first ragged edge that can afford him protection.

The eruption of scabies usually makes its first appearance between the fingers; from these it extends more or less quickly to the wrists, flexures of the elbows, axillæ, inner side of the thighs, lower part of the abdomen, nates, and the organs of generation. In children it is met with on the feet as well as the hands, and in infants may be dispersed on every part of the body. In weakly constitutions it may be limited to the hands for a considerable period without extending further, while in severe cases and sanguine constitutions it may speedily spread over the entire body, with the exception of the face, which is very rarely affected.[1] The excessive itching causes persons suffering from this annoyance to scratch, with violence, the seat of the eruption; but the scratching only diffuses the pruritus, and the skin is often severely torn and abraded. When the points of the vesicles are broken, they become covered with small, thin, yellowish scales, and when they are made to bleed, they are occasionally followed by little black scales, like those of prurigo. When, also, in consequence of superadded irritation, from susceptibility of the skin, from scratching, from injudicious remedies, or from a plethoric state of the system, the vesicles take on the character of pustules, the disease assumes the

[1] The only case on record with which we are acquainted, of scabies affecting the face, is one mentioned by Alibert. The subject was an infant, and was supposed to have received the disease from the mammæ of its nurse.

appearance which has been described by Willan under the name of *pustular itch* (scabies purulenta).

The seat of the eruption of scabies is occasionally found to be modified by circumstances. For instance, while in the generality of cases, the disease is observed between the fingers and on the wrists, in those who, from hard labor or the manipulation of hard substances, have the epidermis of the hands and arms much thickened, it would be sought for in vain on those parts. In tailors and needlewomen the eruption is first developed on the hands; and in infants, as Rayer remarks, the vesicles are first perceived upon the breech. Its occurrence on the genital organs, the lower part of the abdomen, and the inner side of the thighs, is probably attributable to conveyance by the hands. John Hunter alludes to the limited distribution of scabies in this country as compared with a warmer climate, and notably with that of Jamaica. In England, he observes, "the itch commonly appears between the fingers, about the wrists, ... but this is not the case in the West Indies; the disease spreads almost uniformly over the skin, which is probably to be imputed to the heat of the climate." And he further goes on to narrate that he has sometimes seen "alarming symptoms, which so far disguised the disease that it could not, for a time, be known to be the itch. The small pointed watery vesicle or pustule, which characterizes the itch, has been changed into an eating sore, that in part destroyed the substance of the skin."

The activity and extent of scabies are strikingly modified by the state of constitution of the patient, its energy maintaining an apparent relation with the vigor of the system. When the person is of sanguine temperament, and robust, the scabies spreads rapidly, and gives rise to insupportable pruritus; when, however, the subject is weakly and infirm, or reduced by the presence of other diseases, its progress is slow, the eruption partial, and the pruritus moderate.

Although in cold and temperate climates scabies may be regarded as a mild and unimportant affection as respects the health, producing but little local disease, and no constitutional symptoms, yet in warmer climates, as observed by Adams[1] in Madeira, it is accompanied with pyrexia, and the local effects are often very severe. The itch-animalcule is very common in the island of Madeira, where it is called *ouçou* or *ouçam*. The following case, illustrative of these remarks, is quoted from Adams's account of this disease:[2]—

"A patient (an European) applied to me on account of a spreading inflammation, attended with large vesications, collections of serum, in some places of pus, with intolerable itching, sometimes intense pain and smart fever. All these symptoms were much exasperated at a certain period of the day. I treated it like any other inflammatory complaint, with evacuants, and poultices to the part. The latter afforded some relief, but my patient grew extremely impatient from the fever and frequent violent pains, which deprived him of sleep. This induced me to examine the part with more care, and to convince myself that, how great soever the pain might be, the mischief extended only immediately under the cuticle. In the mean time, the female servant, who assisted with the poultices, pronounced the disease *ouçöes*, and to convince him of the truth of her assertion, extracted two from the edges of the sore, which he saw crawling on his nail. This appearance of the disease, so entirely local, and the part affected with such violence, was so different from anything I had met with before, that no evidence less than the above would have satisfied me. The pain indeed was less surprising when we consider the disease was immediately on the rete mucosum. Subsequent experience taught me that these symptoms are by no means uncommon. The disease yielded instantly to the usual topical remedy."

---

[1] On Morbid Poisons.

[2] Page 298.

SCABIES NORWEGICA BOECKII.—The celebrated Hebra, under the above head, pays a graceful compliment to one of the most amiable and learned of European physicians. Danielssen and Boeck, in their early investigations into elephantiasis Græcorum, had noted the frequent complication of that disease with scabies, lichen, prurigo, eczema, impetigo, and ecthyma; and the favoring of those eruptions by the dirty habits of the people. Boeck had also observed a peculiar form of inveterate eruption which came before him for the third time in 1851, in the hospital of Christiana; the palm of the hands and sole of the feet, the anterior surface of the forearms and arms, the elbows, the posterior surface of the legs and thighs, the podex, together with the neck and scalp of this patient, were covered with a thick, hard, adherent crust of a dirty greenish-gray color; the crust impeded the flexion of the fingers, and was so dense as to yield only to cutting with a knife; the nails of the fingers were thick and deformed; and when the crust was removed the exposed surface of the skin was red, moist, and uneven. Subjected to the microscope, the crust was found to contain in vast numbers, dead acari, ova, and particles of fecal matter. And the more recent researches of Hebra served to identify these acari with those of scabies, and to determine the existence of burrows and living acari in the crusts; and of living acari, both male and female, and in extraordinary numbers, in the rete mucosum.

Subsequently to the notice of this disease by Boeck, and the corroboration of Boeck's observations by Hebra in Norway, cases resembling the Norwegian scabies have been seen in other countries, and by other investigators, for example, by Fuchs in Gottingen, Bamberger in Würzburg, Rigler in Constantinople, Hebra in Vienna, and Bergh also in Würzburg. It has been termed *scabies crustosa*, in consideration of the most striking feature of the disease, namely, its hard and dense bark-like formations; and it has been thought that the terms *lepra scabiosa* of Plenck and *impetigo scabiosa* of Willan must have been suggested by this disease. With reference to the field of observation enjoyed by Plenck we are unable to form an opinion; but in regard to our esteemed countryman Willan we may safely affirm that no such disease ever came under his notice. There seems good reason to believe that scabies crustosa is no more than common scabies aggravated by dirt and neglect; and it reminds us of those extraordinary accumulations of sordes and acari which are sometimes met with in mange in unhealthy and neglected horses. In ordinary scabies, it is well known that the hairy parts of the body always escape, but in scabies crustosa, the crusts are found to be as extensive and almost as thick amongst the hair as elsewhere.

In a case of this disease lately published by Bergh, the patient was sixty-six years old, and had been troubled with general pruritus for two years. The skin was rough, scabrous, and desquamating, while on the scalp was a thick firmly adherent crust; and in and about this dense crust were numerous acari, ova, larval exuviæ, and fecal accumulations. The crust retained the moisture of the skin, which was damp and red on exposure; and the fluids excreted by the inflamed skin seemed to serve as the means of nutrition of the acari.

DIAGNOSIS.—One of the most important features in the history of scabies is the distinction of the disease from other cutaneous affections; and this, not only with reference to the mind of the patient, but also with regard to the management to be adopted. The treatment which is applicable to scabies would be improper in other diseases; while, on the other hand, the means appropriate for the cure of other diseases would leave the itch in full possession of its mischievous activity. The chief diagnostic features of scabies are, *firstly*, a peculiar scaliness and undermined state of the epidermis, which are not met with in other cutaneous affections; *secondly*, its papulæ and conical vesicles, the latter having acuminated and transparent points; and *thirdly*, and principally, the presence of the acarus, which may be extracted from its retreat beneath the loosened epidermis with the point of any sharp instrument.[1] The diseases with which scabies is apt to be confounded are, eczema, prurigo, lichen, impetigo, and ecthyma.

For eczema, it may easily be mistaken; seeing that the eruption is really an eczema excited by the presence of the acarus. The same remark applies to lichen, the papulous element of the eruption is a true lichen; and it is by no means uncommon to find the eruption of lichen, excited in the first instance by the acarus scabiei, perpetuated as an independent eruption. To this latter we have given the name of lichen pruriginosus.

Prurigo is a disease attended with thickening and considerable alteration of the skin, and unaccompanied by vesicles; it occurs on the back and shoulders, and the outer side of the limbs, where the skin is thickest. The pimples of prurigo are frequently torn by the nails, and surmounted by little black scabs, which are characteristic of prurigo; whereas the scabs which form on the ruptured vesicles of scabies are mere scales, and yellowish in color, a few only being black, when the scratching is carried to the extent of making the vesicles bleed. The pruritus of the two diseases, again, is different; in prurigo it is burning, pricking, and painful, which is not usually the case in scabies, and, moreover, the disease is not communicable. Prurigo is occasionally met with as a complication of scabies, and in this case the diagnosis requires a nice discrimination.

---

[1] Dr. Gull suggests the exploration of the detrita of the epidermis in the course of the cuniculi for the detection of the ova of the acarus as one element of diagnosis of the disease: *Lancet*, July 4, 1857. And Mr. Holthouse, in the following number of the same Journal, reports that of 126 cases of scabies occurring in the "foul wards" of St. Bartholomew's Hospital, only thirty presented the cuniculi of the acarus; and in every instance, in the hands and feet only. From which we must infer, that the remaining 96 cases were examples of an eruption excited by the male or unimpregnated acarus, neither of which dig burrows in the epidermis, or that, more probably, they were instances of eczema mistaken for itch.

Scabies can only be mistaken for impetigo and ecthyma when complicated with pustules; however, the limitation of the pustules to the hands or flexures of the joints, and the presence of the scaly epidermis, together with the papules and vesicles of itch, will be sufficient to determine the diagnosis.

Another complication of scabies frequently results from the irritation of substances employed in the treatment of the disease; namely, an eruption of eczema. We have seen cases wherein the treatment of scabies had been continued for upwards of six months, and the disease, to all appearance, had resisted the remedies employed for its cure. But in these instances the scabies was long since eradicated, and the obstinate eruption which continued was an eczema, induced and perpetuated by the irritating applications used for the cure of the supposed itch. These cases immediately recovered when treatment was laid aside.

CAUSES.—Scabies affects all ages, both sexes, and all ranks of society, but is most frequently seen among the lower classes, in whom personal cleanliness is neglected, and the opportunity of transmission consequently greater. When the disease makes its invasion in respectable families, its source may generally be traced to laundresses, servants, and their connections.

Until recently scabies was hardly known in London, nor probably in England; it had diminished in our workhouses, and was rarely met with among nurses and children in private families. But since the spread of war throughout the world the disorder has revived; it has extended remarkably, and has found its way into a higher class of society than that in which it previously moved. Immediately after the close of the Crimean war, scarcely a day passed without bringing before us a case of scabies, chiefly in the person of a military or naval officer; and at present we see several such cases in the course of a week, not, however, so much among the original introducers of the disorder as in those to whom it has extended. The source of the disease in this case was probably the ships in which the troops were transported, a suspicion confirmed by the fact that families coming from the East or Australia are very frequently attacked on their voyage by the itch.

The disease is always communicated by contact, either immediately or through the medium of articles of clothing which have been in the possession of the infected person. But there are many circumstances predisposing to its influence, such as luxuriant health and vigor, sanguine or lymphatic temperament, the spring or summer season of the year, warm climate, youth, confined atmosphere, want of cleanliness, &c. The period at which the eruption makes its appearance after the invasion of the acarus presents several important and remarkable modifications, having relation to the state of health and age of the subject, and the season of the year. Thus, in strong and healthy children vesicles have been observed at the end of two days, the ordinary period for children being four or five days, while in those that are weakly the period of eruption may be further postponed. In adults, the ordinary period of incubation is a week or ten days; but in the winter the eruption may not appear for a fortnight or three weeks. Old persons, again, require a still longer time for the development of the eruption, particularly in the winter season.

The proximate cause of scabies is the acarus scabiei,[1] which is transferred by the infected to those who are sound by actual contact; and the period most favorable for transmission is the night and during sleep. During the day the acari remain buried in their retreat beneath the cuticle, and contagion is improbable; but after the first half hour of bed, when the body has attained a genial warmth, the male acari issue from their haunts in search of the unimpregnated females, and the larvæ and young acari change their retreat. At this time they pass undisturbed from one region of the body to the other, from one person to another, or from the person to the bedclothes, to be transferred the following night to another person sleeping in the same bed. In illustration of this subject, Bourguignon gives the following account of an experiment which he performed on himself on the 14th of February. He placed on his left forearm a female acarus, which took at once to the epidermis. The next morning the animalcule was found established in a burrow which it had made in the interdigital space between the thumb and forefinger of the same hand. It pushed its burrow onwards at the rate of half a millimetre a-night, without evincing any other sign of life. Each night, about half an hour after retiring to bed, Bourguignon experienced a sensation of itching, at first fugitive, then persistent, but yielding, after a while, to sleep. The pruritus was most troublesome on the left forearm, about the shoulders, and at the inner side of the thighs; and in these situations a few papulæ made their appearance. On the 28th of February, papulæ appeared on the outer side of the left forearm and on the back of the left hand, the itching on the latter being gnawing in sensation. On the first of March, at night, a sharp piercing pain was felt in the scrotum, and repeated several times at intervals of ten minutes; these sensations were followed by an acute smart, as though from a pinch; the pinch was repeated every five minutes, and for the time was almost unbearable. When in bed the pricking became more severe, and was associated with a general pruritus of the most annoying description; and the sufferer was driven to have recourse to the stavesacre ointment, which relieved the pain in twenty-four hours, and effected a cure in three days. Bourguignon now turned his attention to the burrow in the hand, which had given him no uneasiness whatever, although the acarus had been buried in the epidermis for twenty days. In this burrow he discovered the animal, with ten eggs, and in the skin between the middle and ring-finger a young acarus several days old; and he inferred, with apparent reason, that the painful sensations in the scrotum had been produced by another of the young. Twelve days later he found a cuniculus near the seat of that occupied by the first animalcule, and in the burrow, besides a young acarus, four ova. Later on he discovered a fourth young acarus between the fingers of the left hand. And during the whole of this period, now prolonged to a month, he had suffered from teasing itching and a papular eruption. A month had proved sufficient, not only to produce ova and young, but also the means of impregnating one at least of the young females, namely, that which was found with her train of four ova in the cuniculus between the fingers.

---

[1] The history and description of this animalcule will be found in a separate chapter at the conclusion of the volume.

Some interesting and conclusive experiments on the habits of the animalculæ were made, on the revival of the acarus scabiei in France, by Albin Gras, a pupil at St. Louis, and published by that gentleman in the year 1834.

Exp. 1.—"On the twenty-eighth of August," writes M. Gras, "in the presence of several physicians and students, I placed two living acari on the middle and anterior part of my forearm, and covered them with a watch-glass kept in its place by a bandage. On removing the apparatus on the thirtieth, we found two superficial cuniculi (sillons) half a line in length, and at their extremity two little white points,[1] indicating the presence of the acari. Substituting a fold of linen, retained in its place by a piece of adhesive plaster, for the watch glass, the acari were left undisturbed for six days longer. At the end of this time the white points were no longer perceptible, and the cuniculi having become obliterated, had disappeared."

Exp. 2.—"On the first of September I placed seven living acari on my forearm, and covered them with a fold of linen, and piece of diachylon plaster. Four days after we found four or five well-marked cuniculi. On the sixth of September two of the acari being extracted from their cuniculi, were found active; they were then replaced. On the twelfth another animalcule was removed and examined; it was quite lively. On the fourteenth there was considerable itching, with the development of a vesicle; the cuniculi were two lines long. On the sixteenth there were *several new vesicles near the cuniculi, but not on their line*. On the seventeenth the vesicles of the previous day had been rubbed off by the linen, but two or three new ones were visible. On the following day I put an end to the experiment, by rubbing some sulphuro-alkaline ointment into the part. During the course of the experiment I suffered pruritus from time to time."

Exp. 3.—"On the ninth of the month I imprisoned six acari on my ring finger, by means of the finger of a glove. Next day there were two cuniculi half a line long. The acarus of one of these burrows was apparent for ten days, the other for three weeks, but after this period they both disappeared. During this interval I cauterized several suspicious vesicles developed on the same finger, and discovered two new cuniculi originating in acari that had fixed themselves without having been observed. None of the vesicles appeared on the line of the cuniculi."

---

[1] The dark brown crescentic speck produced by the color of the head and anterior legs, is certainly more striking as a diagnostic character than the white body of the animal here referred to; both, however, should be taken in conjunction.

Exp. 4.—"I lately placed nine acari in the bend of my left arm, and retained them there by a compress and bandage. Four hours after I felt pruritus, and next day perceived four cuniculi. Several days after, some vesicles showed themselves on my forearm."

Exp. 5.—"Having placed two acari in the flexure of the elbow of two persons, who expressed their willingness to submit to my experiments; on one, three or four vesicles were apparent on the fifth day, and were accompanied by severe itching. On the other there were two cuniculi, with pruritus, but no vesicles."

Prognosis.—Scabies is a mild disease, and trespasses but little on the strength of the system. Some few cases have been recorded in which the eruption has subsided during an acute disease, to reappear as soon as that disease had become somewhat mitigated. Instances have also been advanced, with a view to prove that certain serious visceral disorders have occasionally been developed, upon the sudden retrocession of scabies. These statements are not borne out by observation, and refer to a period when scabies was the generic epithet for every disease of the skin attended with itching; but there is good reason for belief that a brisk attack of itch would rather be useful than otherwise, as a counter-irritant.

Treatment.—The treatment of scabies is purely local, and numerous therapeutic remedies have been employed from time to time for its cure; moreover, as the object to be attained is simply the extermination of the acarus, many have been successful. Several of these midicines act by means of their stimulating powers, and at the same time that they destroy the parasite, excite considerable irritation in the skin. Others, again, effect their object without causing irritation, or they give rise to much less inconvenience. In selecting our measures of treatment, therefore, our attention should be directed to the employment of remedies which will act with certainty, and will produce the least possible degree of excitement in the cutaneous surface. Such a remedy is presented to us in sulphur, which may be regarded as specific in the treatment of scabies. To effect the cure, the sulphur is rubbed into the skin, and is conveyed by imbibition into the texture of the epidermis. Here it probably combines with hydrogen, and sulphuretted hydrogen gas is evolved, which acts as a deadly poison on the acarus, and destroys its ova. In some instances the sulphuretted hydrogen gas in solution is employed as a wash or bath, and answers the purpose perfectly, but is longer in effecting a cure than the sulphur, probably on account of the gradual and constant generation of the gas in the tissue of the epidermis, in the latter case. The sulphuretted hydrogen lotion gives rise to less irritation than the sulphur ointment, and is therefore a preferable mode of treatment in children, and persons with a delicate skin. Before either of these or any other remedies are employed, however, it is desirable to prepare the skin for their reception by a thorough ablution with soap, or with a warm solution of subcarbonate of potash, containing about half a pound of alkaline salt to a gallon of water.

To effect the cure of scabies in the shortest possible time, the best preparation of sulphur is the simple sulphur ointment of the British pharmacopoeia, of which, in the adult, two to four ounces should be well rubbed into the affected portions of the skin, morning and evening, for two days. It is desirable also that the patient should wear a woollen shirt, and retain the same during the whole treatment. When this covering is not sufficiently large to envelope the entire body, he should also lie between blankets. On the morning of the third day the patient should take a warm bath, and wash the skin thoroughly with plenty of soap, when the cure will, generally, be found to be effected. Much, however, depends upon the manner in which the alkaline ablution and the friction of the affected parts shall have been performed. In children one half of the above quantity of ointment will be found sufficient. This method, while it offers the advantage of a rapid cure, is liable to the inconvenience of producing accidental eruptions. We are in the habit of combining with this plan the internal administration of sulphur, in doses of ten grains to a scruple, with a like quantity of bitartrate of potash; or a drachm of confectio sulphuris, night and morning. And this we should recommend to be done when the cure by inunction of lard or chamomile ointment is preferred.

Reflecting on the *rationale* of the treatment of scabies by sulphur, we are led to the conclusion that the object to be attained is the thorough impregnation of the skin with the vapor of sulphur; and then the question arises, whether this end is to be attained in any other way than that above described. In hospital practice, and in the case of children, it may be easy enough to saturate the skin with the sulphur ointment, and keep the patient within blankets to concentrate the sulphurous vapor on the skin; but this plan is highly inconvenient, and often impossible, to persons engaged in occupations which require daily attention, let alone the annoyance that a man in perfect health must feel at being buried in blankets for a couple of days. Appreciating this difficulty, we have, for some years past, had recourse to a very simple method, which we have found to answer the purpose completely, and which has the advantage of demanding no confinement, and none of the heroic rubbings in above described. Our plan is to require the patient to rub into his hands, and particularly into the wrists and between the fingers a little sulphur ointment. This he repeats several times a day; for example, every time he washes his hands, and again at bedtime; the latter rubbing being a more thorough one than the rest. Moreover, at bedtime he smears the ointment on any other part of the body where irritation or eruption may exist. Then, besides the outward application, he takes from ten to thirty grains of the sulphur præcipitatum or a drachm of confection of sulphur twice a day. In this way we secure a perpetual atmosphere of sulphur, and a thorough saturation of the skin, both from within and without, an amount of saturation, in fact, which no acarus can resist. The quantity of sulphur ointment required is small, and such as may be allowed to remain on the skin and between the fingers without detection by an indifferent person, and yet sufficient to answer every purpose. This method of treatment destroys the acarus in the clothes as well as in the skin of the patient; and, with the slight exception of giving him the smell of a brimstone match, a smell which he may cover with any kind of perfume, is unattended with the least inconvenience. A week of this treatment, followed by a second or third week of a modified plan, for example, merely using dry sulphur-powder to the hands, instead of the ointment, and continuing the sulphur internally, will effectually cure the disease; and during its progress the patient may take a tepid or warm soap-bath every third day. To protect the clothes not in use, shutting them up in a drawer, with some sulphur-powder sprinkled between them, will be found sufficient, and we also recommend the sprinkling of sulphur within the bed.

Another excellent remedy is the solution of pentesulphide of calcium, made by boiling lime and sulphur in water, and straining off the clear. This fluid, on being sponged upon the skin, leaves behind it a film of sulphur, and is a convenient application. It was originally introduced by Dr. Astley Price for the destruction of the oidium of the vine in France, and was attended with remarkable success. When used for the cure of scabies, it may be sponged upon the eruption twice in the day, or at bedtime only, according to the convenience of the patient and the special circumstances of the case.

The sulphuretted hydrogen treatment consists in bathing the surface of the body in a solution or bath of sulphuret of potash, containing one or two ounces of the salt to a pint of tepid water, or in sponging the skin with a diluted mixture of two solutions, the one containing sulphuret of potash, the other hydrochloric acid. The former of these methods is well adapted for young children, but the latter frequently creates considerable irritation, and produces accidental eruptions. The duration of treatment is a week or ten days. Numerous other preparations, sulphurous and non-sulphurous, and each possessing, according to its advocates, peculiar advantages, have been recommended by different authors. Formulæ of the more deserving of these remedies will be found in the chapter devoted to remedies at the end of the volume.

In the treatment of scabies it is necessary to make a distinction into the management suitable for private or public practice, and also for the degree of the disease. In the first case, a partial or at least a modified use of the sulphur treatment may be all that is necessary; time is less an object than the avoidance of inconvenience and exposure; but in public practice, rapidity of cure is the most important consideration, and must take the place of every other; and where the disease is universally present upon the surface of the body, the treatment must be equally general. In private practice, we have constantly succeeded in effecting a cure by the application of the sulphur ointment to the hands alone; and we have been prepared, had the occasion presented itself, of adopting instantly a more general plan; but in public practice this kind of observation is impossible, and therefore the use of a general and speedy method from the first is a matter of necessity. The most striking example of a speedy method, and at the same time of a most undiscriminating one, is that which is in use in the Belgian army, and was first put in practice by the Medical Director General, Vlemingkx. The process is as follows: The patient is thoroughly rubbed all over with soft soap or common soap, applied by means of a woollen pad, for the space of half an hour; secondly, he is soaked and washed for half an hour in a warm bath; thirdly, he is well rubbed for another half hour, by means of a woollen pad saturated with a solution of pentesulphuret of lime, holding the lime in suspension; and fourthly, the skin is washed free from the sulphur and lime by means of a tepid or cold bath, or by a shower-bath or douche, and having dried and dressed, he returns at once to the duties of his regiment. There can be no doubt, that as far as the destruction of the acarus and its ova is concerned, this plan is most efficacious; but the eruption primarily induced by the acarus remains, and indeed is seriously aggravated by the severe treatment which the patient has undergone.

The principle of the speedy methods is in every instance the same half an hour of soaping, half an hour of soaking, and half an hour of medication, to be followed after a longer or shorter period by a final bath. Hardy, like others, has his speedy method, which he calls a two-hour cure, but which in reality is a twelve-hour cure estimating the period of time included between the soaping and final bath; and he prefers for inunction an ointment of sulphur and carbonate of potash, containing one part in seven of sulphur, his object being to avoid as much as possible the irritation caused by the latter. He begins with a general friction with soft soap for the space of half an hour; secondly, a warm bath of half an hour's duration to saturate the epidermis; and thirdly, a thorough inunction over the whole body with eleven ounces of his diluted ointment. The ointment remains on the skin for twelve hours, for example during the night, and is washed off in the morning in a tepid soap-bath. In private practice he modifies this process by ordering two inunctions instead of one, with an interval of twelve hours between them; or, to avoid the unpleasant smell of sulphur, advises, instead of the latter, the essential oil of mint or lavender dissolved in water or glycerine. He remarks that the sulphur purifies the garments of the patient; and for the purpose of disinfecting the clothes, he recommends fumigation with sulphur vapor, or a high temperature, namely of 200° or upwards. It may be mentioned, that, for the same purpose, Bourguignon suggests a low temperature as being highly destructive to the acarus.

The treatment pursued at the hospital of St. Louis in Paris, is as follows: A soap-bath, followed twice a-day with inunction into the hands and feet of the sulphuro-alkaline ointment; the quantity employed is about an ounce at each friction, and the friction is continued for ten minutes, a bath being taken between the frictions. The cure is effected in eight days, the eruption taking a week longer to subside. Bourguignon mentions an empirical treatment remarkable for its success, and which consisted in two frictions of a quarter of an hour each, with an interval of twelve hours, of an ointment composed of gunpowder and sulphur.

Young children in St. Louis are washed four times daily with soap, the treatment being prolonged for nineteen days. The great frequency of the presence of the acarus upon the hands and feet only, has led to the adoption of sulphur frictions solely to those parts, but the occasional detection of the animalcule upon other regions of the body has led to the use of general frictions to the entire surface. It is important in every case to begin with a warm soap-bath, and after this preliminary bath, if one or two ounces of the sulphuro-alkaline ointment be thoroughly rubbed into the epidermis twice in the day, and for half an hour at each friction, a cure may be effected with certainty at the end of two or three days, and without the chance of relapse that sometimes follows more partial frictions. At the conclusion of the frictions as at the beginning, a warm soap-bath should be administered.

Hebra sanctions the speedy methods for public practice, but for private treatment, gives a preference to an ointment composed of juniper or beech tar, chalk, soft soap, and lard, and containing one eighth part of sulphur. The body is to be thoroughly soaped and washed for an hour at bedtime, the ointment is then to be well rubbed into the whole surface of the body, with the exception of the head and face, and in the morning the patient cleanses his skin with a tepid bath and soap. This process is to be repeated for three or four nights, and the ointment may be made more agreeable for use, by the addition of the essential oils of aniseed and rosemary.

Pyhorel recommends the friction of half a drachm of sulphurite of lime with sweet oil into the palm of the hands, without any application to the surface of the body, the treatment being continued for fifteen or twenty days. Fantonetti advocated the use of chloride of lime; and Delpech the employment of frictions of sweet oil alone. This last remedy would, doubtless, act most destructively upon the acarus, could the oil reach the animalcule. In our own practice we have found sweet oil, containing a little camphor, very successful in infants whose skin was too tender to bear sulphur ointment. And carrying out the idea of the oily matter bearing a considerable share in the curative agency of the sulphur remedies, we have also employed inunction with lard alone with a satisfactory result. The lard must be well rubbed into all parts of the body, particularly into those chiefly affected, night and morning, and by the end of a week the cure is complete; a warm soap-bath should then be taken to purify the skin. Mr. Stiff, in a communication made to the "Medical Times" in 1845, is an advocate of this plan; and Bazin, in some trials lately made at St. Louis, states that six frictions with oil or lard are all that are requisite for the cure of scabies.

Bazin prefers, however, an ointment of chamomile to the simple lard, and he states, as its advantages, that it cures in three frictions; that it relieves the itching instantly; and that it gives rise to no secondary eruptions, as is the case with the sulphur and sulphuro-alkaline treatment. His formula for making the ointment is to mingle equal parts of fresh chamomile flowers, olive oil, and lard, and heat them together n a sand-bath. It appears to us that the same purpose would be gained by adding the essential oil of chamomile to lard.

Among the simples recommended from time to time by different hysicians, or employed popularly, are, solution of tobacco, used by Boerhaave, but liable to many objections; stavesacre, used by Am-rose Paré;[1] hellebore, scabious, sweet-scented rush, elecampane, and ions.

The use of stavesacre and hellebore has lately been revived, and, ccording to their respective suggestors, with flattering success. Bourguignon recommends that the patients should begin their treat-ment as usual, by taking a soap-bath; that, after the bath, the staves-acre ointment should be well rubbed into the whole body, particularly nto the parts chiefly affected, for a quarter of an hour; and that the nunction should be repeated four times a day. On the fourth day he cure is complete, and another soap-bath should be taken. Bour-uignon's formula for the ointment is twelve ounces of powder of the eeds of stavesacre, to be stirred into twenty ounces of boiling lard, nd macerated in a sand-bath for twenty-four hours. It may then be trained, and some essences added to give it a pleasant odor. The rmula proposed for the hellebore is, to mix together eight ounces f powder of white hellebore with four ounces of soft soap, and suffi-cient hot water to bring it to a consistence fitted for friction on the kin. It should be used once a day until all itching ceases, and then ashed away in a warm bath. After a few frictions it produces a eling of heat in the skin. Hellebore is also well known to be a nstituent of the compound sulphur ointment.

Bourguignon was led to the restoration of stavesacre by the hope f escaping the inconveniences of irritation which attach to the use f sulphur. He found that the acarus immersed in tincture of staves-acre died in fifteen minutes; and carrying this observation into prac-ce, that not only the acari but the ova also were totally destroyed y soaking and washing the hands in warm water with soap, and terwards submitting them to a manuluvium of the concentrated ncture of stavesacre for two hours. In other words, supposing all e acari to be present in the epidermis of the hands, as occurs in wenty per cent. of cases of scabies, the disease would be entirely ured in that space of time; while, in the remaining thirty cases, it ould be necessary to apply the remedy to the whole body, and con-sequently, by the aid of an ointment of the same seed. His observa-on of the action of the remedy upon the inflamed skin leads him to nclude further, that it relieves pruritus, checks the development of uption, subdues inflammation, and soothes the painful and irritated in. In these experiments he made use of an ointment of delphinine ithout the benefit resulting from a pomade of the powder of the seeds; d made trial of the virtues of bichloride of mercury, spiritus cam-oræ, spirits of turpentine, and iodide of sulphur combined with dide of potash. All these remedies, with the exception of the last, were inferior to the stavesacre; and although a solution of iodide of sulphur and potash destroyed the vitality of the acarus in eight minutes, the discoloration and irritation to the skin, when used as a manuluvium, was so great that the experimenter came to the conclusion that, as a remedy for scabies, it was utterly inapplicable.

---

[1] Ambrose Paré's remedy for scabies consisted in a decoction of equal parts of vine-, seeds of stavesacre, and table salt.

Especial care should be taken that the garments worn by the patient, and the bedclothes in which he has lain, should be disinfected by exposure to sulphurous acid gas, or to a very hot or a very cold temperature. This is a measure of importance, since the acari and their young are apt to remain attached to articles of apparel, and are easily communicated by them. To complete the eradication of the animalcules, perfumes should be worn in the dress for several weeks; and articles not admitting of purification must be destroyed.

The treatment of scabies has been enriched by the observations of Albin Gras, in the work before alluded to. He observes:—

"I was enabled to obtain living acari from a patient who had taken two or three sulphur baths, containing four ounces of sulphuret of potass to the bath. On the contrary, I have frequently found them all dead after a single friction with the sulphuro-alkaline ointment." "But, although the insects are dead, vesicles still continue to appear for several days."

"Immersed in pure water the acarus was alive after three hours; in saline water it moved feebly at the end of three hours; in Goulard's solution it lived after an hour; in olive-oil, almond-oil, and castor-oil, it survived more than two hours. In croton oil it was living after the lapse of an hour, but dead at the end of four; in lime-water it was dead in three-quarters of an hour; in vinegar in twenty minutes; in alcohol also in twenty minutes; but in naphthaline still more quickly; in a solution of sulphuret of potass it was dead in twelve minutes; in spirit of turpentine in nine minutes; in a concentrated solution of hydriodate of potass the acarus ceased to exist in from four to six minutes; in a solution of arsenious acid it was dead in four minutes; in sulphuric acid, diluted with three parts water, it died in three minutes; in pure creasote, and in concentrated acids and alkalies, its death was immediate. Placed overnight on powdered sulphur, the animalcule was found dead the next day; and it required to be exposed to the vapor of burning sulphur for sixteen minutes before it died."

From these experiments we may infer that sponging with vinegar would be a good practice, and one sufficiently harmless to be adopted in the case of the youngest children.

One of the most remarkable of the phenomena of scabies, is the localization of the acarus to a few regions of the body, and especially to the hands; other situations in which it is found, being the borders of the armpits, the abdomen, penis, buttocks, and feet; and these are the situations in which the eruption is most abundantly developed, although the latter is also met with more or less extensively over the entire body. The animal is the excitant, and the excitation of the sensory nerves of the hands is communicated to the whole of the nervous apparatus of the skin, hence the itching and eruption on parts he skin which the acarus never reaches. Hence, also, the principle cure, to remove the local irritation, and thereby to subdue the lex phenomena which take their rise in the local irritation. But morbid sensibility of the skin induced by the acarus is often gravated by the occurrence of the disorder in a person of ecze- atous diathesis; in which case the eczema, in some one of its forms, comes established and permanent, and requires the treatment of ema for its removal. In such a constitution the acarus merely kes the place of a more common cause of the complaint, and the isease which ensues is not to be regarded as scabies, but in its true haracter as eczema or lichen, as the case may be. The treatment lso must be that which is suitable for eczema, without reference to he scabies, which is to be treated locally by the usual means; or, as he eczema is secondary in its development, the scabies may be cured irst, and then the eczema may be attacked. After the first week of reatment specifically directed to the removal of scabies, the case must no longer be confounded with scabies; the medical man must ot yield to the belief that he has to do with an instance of unmanage- ble scabies; and the patient must not be permitted to carry away he impression that his medical adviser is unable to cure the scabies. But to effect the cure the removal of the primary cause is essential. No treatment, however well directed, will benefit the eczema until he acarus is destroyed; and when the acarus is effectually destroyed, s may be ascertained by the disappearance of all irritation about the ands and wrists, the treatment should be continued as for an ordi- ary and uncomplicated example of eczematous eruption.

CHAPTER VI.

ERYTHEMATOUS AFFECTIONS.

THE Exanthemata of Willan are naturally divisible into two roups, the eruptive fevers, comprehending rubeola, scarlatina, and ariola, of which we treat in our thirteenth group, under the designa- ion of zymotic affections; and those superficial hyperæmiæ of the kin which take erythema as their type, the erythematous affections, nd form the subject of the present chapter. The exanthemata and rythemata are the *efflorescences* and *rashes* of the skin; the former term eing most appropriately rendered by efflorescence, a blossoming out ike flowers, which the little corymbi of rubeola might be taken very irly to represent; while the latter term, erythemata, derived from [illegible], to redden, may be equally well rendered by the word rash, r inflammatory blush.

The definition of exanthema given by Willan is, with slight modi- cation, applicable also to erythema; namely, "superficial red patches, riously figured, and diffused irregularly over the body, leaving interstices of a natural color, and terminating in cuticular exfoliations." The modification relates to the words "leaving interstices of a natural color:" these words have in view the general efflorescence of rubeola and scarlatina, and also of a member of the present group, namely, roseola; the rest of the erythema being local, and requiring no such limitation.

The leading distinction between the erythemata and the eczemata is the difference of relative importance of the local and constitutional disorder in the two kinds of affection. In eczemata the principal interest attaches to the local affection; in erythemata the constitutional disorder is of most consequence, the local manifestation being often a mere symptom of derangement of the stomach and digestive organs, and following, like the eruptive fevers, a more or less regular order of development. Thus, in several of the forms of erythema, in erysipelas, and in roseola, the beginning of the attack is announced by nausea, prostration of power, weariness, and headache; these symptoms are followed by fever; on the second or third day of the general illness the rash makes its appearance, goes on increasing for four or five days, and then gradually declines. At the outbreak of the rash there is commonly a marked relief to the constitutional symptoms, and in some instances the latter quickly disappear. Hence the relation between the local affection and the constitutional affection is very manifest.

The diseases included in the present group are:—

Erythema,
Erysipelas,
Urticaria,
Roseola.

ERYTHEMA.

Syn. *Inflammatory blush; efflorescence cutanée; dartre erythemöide,* Alibert; *Hautrothe,* Germ.

ERYTHEMA, or inflammatory blush (Plate I. G K), is a superficial inflammation of the skin, more or less partial in its distribution, occurring in spots and patches of various size, sometimes diffused and sometimes circumscribed, and attended with more or less swelling and pruritus. The redness is sometimes scarlet, sometimes crimson and purplish; and on dispersing, is followed by a bluish and yellowish stain, like that of a bruise; the resolution of the inflammation being succeeded by exfoliation of the cuticle.[1]

Erythema comprehends a very considerable range of pathological variety in the vascular condition of the skin, from the simplest temporary distension of capillaries with blood, to effusion or transudation of certain of the elements of blood into the circumjacent tissues; from a simple hyperæmia, which subsides without leaving a trace of its existence, to a suspension of cell nutrition, which results in exfoliation or furfuration of the epidermis; or to effusion of serum in sufficient quantity to produce veritable œdema. At the one extreme, have simple blushing from emotional excitement, or the stimulus the cutaneous nervous system through the agency of the gastric ves; and at the other, the sudden swelling of erythema tumescens, the more permanent swelling of erythema nodosum. Another pression of the same pathological condition is conveyed by the ms hyperæmic and erudative; and as these two phenomena are the sis of two of the classes of Hebra, namely, hyperæmiæ and exsuta, we find erythema occupying a place in both those classes; the mer comprehending erythema from injury, heat, or irritants, erythe- seu roseola infantilis, variolosa and vaccina, livedo, and cyanosis; latter, erythema exsudativum multiforme, including the varieties pulatum, tuberculatum, iris, annulare, and marginatum, and also thema nodosum.

---

[1] Plenck's definition of erythema is as follows: "Macula rubra, solitaria, apyreta, et topica."

When not due to purely local causes, erythema is commonly sympmatic of some disturbance of the digestive, the nutritive, or the rine functions, or its symptoms are secondary and limited to a slight gree of irritative fever. It is not contagious, and in duration varies m a few days to several weeks.

The VARIETIES of erythema admit of division into two kinds, which, the language of Hebra, may be designated erythema hyperæmicum d erythema exsudativum; and each of these forms will be found to sent certain sub-varieties; thus, under the head of *erythema hyperticum* may be assembled erythema simplex, fugax, and læve; and der the head of *erythema exsudativum*, erythema papulatum et erculatnm, nodosum, circinatum, marginatum, and iris. In tabular rangement they would stand as follows:—

ERYTHEMA HYPERÆMICUM.

Erythema simplex,
" fugax,
" læve.

ERYTHEMA EXSUDATIVUM.

Erythema papulatum et tuberculatum,
" nodosum,
" circinatum,
" marginatum,
" iris.

Erythema simplex may be taken as a general expression for the ire group of hyperæmic erythemata of Hebra; for example, its ive forms, erythema traumaticum, caloricum, and ab acribus seu enatum; and its passive forms, livedo mechanica, calorica, and nosis. Erythema fugax is the appropriate designation of those erficial erythemata which originate in constitutional causes; and thema læve, the cutaneous inflammation resulting from œdema anasarca.

rythema exsudativum, which represents the immediate conseices of congestion as well as hyperæmia itself, is well illustrated e smaller and larger prominences of erythema papulatum, tuberculatum, and nodosum; the circles and rings of erythema circinatum; the broken rings of erythema marginatum; and the concentric rings of erythema iris. Viewing the affinities of certain of the forms of erythema, Hebra includes under the term erythema polymorphicum or multiforme, the prominent varieties papulatum and tuberculatum, as also the annulate forms, circinatum and iris, and an advanced stage of erythema circinatum in which the rings are confusedly mingled together, termed by Fuchs erythema gyratum. Moreover, Hebra enlarges the group by an appendix of two remarkable forms of erythema, the one a native of Italy, the other of France, namely, pellagra, the leprosy of Lombardy, and acrodynia, an epidemic erythema which was first noticed in Paris in 1828–9.

ERYTHEMA SIMPLEX is known by the presence of simple vascular congestion of the skin, with little or no swelling, and of a tint of color varying with the activity of the circulation through the part. It is termed *erythema traumaticum* when it is produced by pressure, friction, or any other kind of violence. Sometimes the exciting cause is the pressure and friction of ill-fitting garments, which give rise to *erythema ab attritu;* sometimes undue pressure on the skin, as in bedridden persons, the *erythema paratrimma* of Sauvages, and *erythema a decubitu* of Plenck; by the pressure and friction of riding on horseback, *rubedo clunium in equitantibus;* or, by the friction of two folds of the skin, as in fat and flabby persons and in infants whose skin is naturally sensitive, *erythema intertrigo,* and the evil is increased if the integument be in a moistened state, as by the condensation of perspiration or the flow of secretions over the part. In lymphatic constitutions the erythema is apt to be accompanied with exudation, in the first place of a serous fluid, and subsequently of a muco-purulent secretion. The presence of exudation, however, transfers the affection from the erythematous to the eczematous group, and the case becomes one of eczema mucosum.

When erythema is induced by heat or the absence of heat, it is termed *erythema caloricum.* The first stage of scald or burn is denominated *erythema ab igne,* or ambustio erythematosa; and the period of reaction after extreme cold, *erythema a gelu,* or pernio erythematosa. *Erythema ab acribus seu venenatum* is shown in the action of certain mechanical and chemical irritants, and in the bite or sting of venomous insects, as of the ant or wasp.

Passive erythema is instanced in the livid discoloration of the skin, which is induced sometimes by mechanical force, sometimes by a lowered state of temperature, and sometimes by visceral malformation or disease. *Livedo mechanica* is a passive hyperæmia of the capillaries of the skin, resulting from mechanical interruption of the current of blood through the veins; the cause may be pressure on the trunks of the veins, as by a tumor, or pressure on the surface, as by ligature; the circulation is retarded by these means, and the blood has time given it to undergo its venous transformation, and assume a deep crimson purple, and even livid and black tint. In these cases there is sometimes a slight degree of swelling, and the arrest of oxygenization of the blood is accompanied with a lowered temperature. When the congested skin is pressed with the fingers, the color disappears, but slowly returns when the pressure is withdrawn. The lividity of the skin induced by cold, and seen in various degrees in the winter season on the extremities, the tip of the nose, the lobes of the ears, and other parts of the surface, is known as *livedo calorica*. It is especially remarkable in association with chilblains, and frequently produces a singular mottling of the skin in young children, a mottling in which purple, crimson, white, and blue are curiously intermingled. Another form of lividity of the skin is termed *cyanosis*, and owes its origin to imperfect oxygenization of the blood, as a consequence of arrested development of the heart, and generally of the permanency of the foramen ovale. In this case the blueness of the skin is general, but most remarkable in the face and extremities.

ERYTHEMA FUGAX is chiefly remarkable for its evanescence; it occurs in the form of patches, which are red, hot, itchy, and slightly swollen; sometimes successive, and sometimes changing their place as though by metastasis.

Bateman compares the redness of the patches to that produced by pressure, and remarks upon its association with various febrile affections. He also mentions the opinion of Hippocrates that it denoted a tedious and dangerous disease. Our own experience associates it with disorders of the mucous membrane of the digestive, secreting, and uterine organs, and especially of the former.

Erythema fugax is sometimes more remarkable for a tendency to swell (*erythema tumescens*) than for its redness, and this form of the disorder is often very annoying. A little itching is felt in the part attacked, it swells quickly, and in the course of an hour has attained a considerable size. The swelling lasts for a few hours, and subsides almost as rapidly as it arose. We know a military officer who was the subject of this curious malady. The swelling would take place so suddenly that he was sometimes seized with it while on duty; occasionally it affected the integument of the eyelids; his eyes were quickly closed, and it was necessary to lead him to his quarters completely blinded. But a more painful case was that of a clergyman, in whom the disorder attacked the lips and sometimes the tongue: when it occurred in the latter situation, he was once or twice nearly suffocated.

Erythema fugax is also associated with another curious affection, namely, vicarious menstruation (*erythema menstruale*). A sudden flush with a little swelling appears upon some part of the skin, generally the face; a sanguineous exudation takes place, which lasts for a few days and then subsides. The exudation is not continuous throughout the whole period, but intermittent, and during the intermission, the skin has the appearance of having been scorched. We have seen three well-marked examples of this affection; the patients were young, and suffering from amenorrhœa; they were also hysterical.

ERYTHEMA LÆVE, VEL ŒDEMATOSUM, is a local form of erythema, depending upon the inward pressure of œdema of the subcutaneous cellular tissue. It occurs for the most part in the lower extremities, or in any depending portion of the body. Sometimes it is met with in the eyelids, and is mistaken for erysipelas; and not unfrequently, in the lower limbs, the cuticle breaks up into a series of retiform lines; the exposed cutis exudes a serous secretion; there is considerable pruritus, and the case becomes transformed into one of eczema. Erythema læve is a frequent accompaniment of anasarca, in which case the surface of the skin is red and glazed.

ERYTHEMA PAPULATUM ET TUBERCULATUM (Plate I. G H). The two forms papulatum and tuberculatum only differ in size of the eruption, the symptoms being the same; and not unfrequently they are intermingled in the same person, or on the upper extremities assume the smaller or papulous forms, and on the lower extremities the larger or tuberous form. Both commence with itching and tingling, increased by the stimulus of meals and heat of bed; both are slightly raised at their first appearance, and subside to the level of the skin in a few days; and both are brightly red at first, become purplish by degrees, and fade away into a greenish and yellow stain which resembles a bruise. The smaller kind are met with on the face and neck, the chest, the upper extremities, and particularly in the neighborhood of the joints and upon the back of the hands; the larger kind are chiefly found upon the lower extremities and around the knees and ankles. Both are associated with disorder of the digestive organs, and the latter with disordered menstrual function. The tuberous kind is commonly met with in female servants who have been recently introduced into London kitchens from the country: the eruption is tender to the touch, and frequently accompanied with feverish symptoms and rheumatic pains.

In the papulous form of the eruption the largest of the papulæ scarcely exceed a split pea in dimensions; they frequently increase by the circumference, and present a raised rim with a depressed centre; the rim being red, and the centre pale or yellowish, their subsequent appearance is that of a bruise. In the tuberous variety the spots are circular and fade towards the circumference, while their diameter varies from half an inch to an inch or more; they are extremely tender to the touch, and are followed by a well-marked bruise-like stain.

ERYTHEMA NODOSUM (Plate I. I).—Erythema nodosum only differs from the preceding in a larger development of the inflamed spots, and a somewhat more violent attack of disorder of the digestive organs and feverishness, by which it is preceded. The patches are oval in figure; are hot, painful, and tender, and appear chiefly on the lower extremities, corresponding by their long diameter with the vertical axis of the limb. Occasionally, however, they are disposed transversely, and we have seen two patches so placed as to form a kind of bracelet just above the ankle. They are hard to the touch at first, and sometimes seem to sink deeply into the tissues of the limb, involving even the muscles; in a few days they become softer, and in eight or ten days subside and disappear. At the commencement they are brightly red; as they attain maturity they become purplish, and at their decline have the green and yellow tinge of a bruise (*dermatitis contusiformis*, Hebra). In prominence they rise gradually to the centre, and are commonly associated with considerable derangement of the digestive organs, and frequently with rheumatism. Their size varies from one inch to two or three inches in longest diameter.

Erythema papulatum, tuberosum, and nodosum, are so closely allied to each other, that they might with advantage be included under the same name. The two former are commonly associated in the same patient, and we have more than once seen erythema papulatum on the face and hands, while erythema nodosum existed on the legs.

ERYTHEMA CIRCINATUM (Plate I. K) begins in the form of circular and slightly raised patches, which increase by the circumference and fade in the centre, forming rings of various size, with borders of various breadth, being sometimes narrow and sometimes broad. The skin over which the inflammation has passed throws off its cuticle in furfuraceous desquamation, and the rings, meeting and crossing in their course, give rise to a variety of irregular figures, consisting of broken segments of circles (*erythema gyratum*, Fuchs). This form of eruption is often met with in the course of ailments accompanied with perspiration, and when the patients have been kept hotly covered up with bed-clothes, as in rheumatic fever. It is also seen, in the spring season of the year, on the lower extremities of young persons, and commonly associated with rheumatism.

ERYTHEMA MARGINATUM is a chronic form of erythema circinatum; the border is more raised, particularly at the periphery; the congestion is deeper tinted, often crimson or purple, and the rings broken and irregular. They are chiefly met with in elderly persons on the extremities and loins, and, according to Willan and Bateman, are associated with some internal disorder, their occurrence being deemed an unfavorable sign.

ERYTHEMA IRIS is a circinate and centrifugal form of erythema, developed in concentric rings, and commonly taking its starting-point from a central vesicle, hence we have preferred to describe it under the name of *herpes iris*. In an aborted form it retains the erythematous character, and is commonly met with on the hands and feet, and next in frequency on the lower limbs.

The following cases illustrate some of the phenomena of Erythema:—

CASE 1. *Erythema papulatum et tuberculatum.*—A married lady, habitually dyspeptic, became overheated on the 16th of December, 1845; she was afterwards chilled by exposure to cold in an open carriage for some hours. At night she was feverish and restless.

Dec. 17. Next day she felt unwell, with general *malaise* and lassitude; was exposed to cold as before. In the afternoon had nausea and chills. At dinner she partook of boiled beef, at all times an unpalatable dish to her, and suffered in the evening from nausea and headache. In the night she was awakened with intense nausea, but had no vomiting.

18th. Third day. Felt very unwell, nausea still continuing, with lassitude. A punctiform rash became perceptible on the back of her hands and fingers; the rash was more vivid at night, and attended with considerable itching.

19th. Eruption increasing; affecting the elbows as well as the hands, and slightly the neck and face.

22d. Seventh day. Eruption at its height. On the elbows, the papulæ formed a patch of about the size of the palm of the hand; they were numerous on the fingers and back of the hands, and few and scattered on the face, neck, and head. The greater number of the papulæ were hemispheroidal, slightly raised, of a vivid red color, and equal in size to a split pea. Some were clustered into circular and oval groups of the size of a sixpence, and others were single and isolated. On the back of the hands were spots of a larger size than those above mentioned, as large in diameter as a sixpence or shilling (erythema tuberculatum); they increased in breadth by their border, which was prominent and papular, while the included area became pale and yellowish. The eruption was very tender to the touch.

23d. Eighth day. The symptoms of nausea and feverishness, which were slightly diminished on the appearance of the eruption, were now greatly relieved. The eruption was on the decline; the tenderness subsided; the redness diminished; and each little papula, as it gradually disappeared, formed a distinct ring of red, with a light yellowish area. Traces of the eruption lasted until the end of the second week.

Case 2.—*Erythema papulatum et nodosum.*—A widow, forty-five years of age, had been suffering four months with bronchitis. On the 1st of April, 1846, she had an eruption on the face, and then on the hands, of papulæ of a bright red color, and accompanied by severe itching and tingling. These symptoms were increased on taking fluids of any kind, particularly such as were warm, and they were augmented by the warmth of bed. The papulæ were very tender to the touch, particularly around the finger nails. A few days after the disappearance of the eruption on the face, the large, oval-shaped swelling (delineated in Plate VII.) made its appearance, attained its height on the second day, and declined on the fourth, leaving behind it a purplish and yellow stain, like that of a bruise. The constitutional symptoms preceding and accompanying this eruption were nausea, feverishness, and extreme lassitude. The languor, with great depression of spirits, continued until the termination of the disease.

Case 3.—*Erythema tuberosum.*—A young woman, aged twenty-two, enjoyed good health until nine months ago, when she obtained service in London as housemaid. Since that period she has suffered constant illness; sometimes her bowels were constipated, sometimes she had nausea, at other times cough; menstruation was disturbed, becoming scanty and light-colored; she had leucorrhœa, and copious deposits in her urine, with difficulty in passing it. In fact, all the mucous membranes in her body suffered more or less from disorders. Associated with these symptoms, she had a constant feeling of languor, loss of appetite, and indisposition to make any exertion. While in this state she was seized (January, 1846) with a dry, hard cough, accompanied with headache and the usual train of febrile symptoms; and a copious eruption of erythema tuberosum made its appearance on her forearms, knees, and legs. The majority of the spots were of the size of a shilling piece, they were distributed regularly over the skin, and were very tender to the touch. On their first appearance they were vividly red, but soon became purplish and yellowish, and, by the third or fourth day, were on the decline. This patient recovered at the end of three weeks; her treatment consisting in a smart purgative at first, followed by tonics and wine, and an occasional warm bath. Water-dressing was used to the eruption.

CASE 4.—*Erythema læve of the ankle.*—A cook, forty years of age, after a week of unusual exertion, felt languid and ill, and was unable to walk, in consequence of pain and swelling in her right leg. Her pulse was quick; she had a dry, furred tongue, and headache. The affected leg was œdematous, particularly around the ankle. In the latter situation there was a broad and extensive patch of erythema læve. The veins of both limbs were varicose, but she had never before suffered from any affection of the legs. We ordered her to bed, gave her an active purgative with salines, had the leg supported on an inclined plane, the inflamed parts wetted with a layer of lint dipped in a saturnine and alcoholic lotion, and the whole of the lower leg enveloped in oiled silk. By the next morning the redness had diminished very considerably, and the œdema was much reduced. We then moistened the limb with camphorated spirit, and bandaged it firmly, from the foot upwards to the lower part of the thigh, readjusting the bandage night and morning. From the first day of the application of the bandage she was enabled to walk, but in consequence of again over-exerting herself, and misapplying the bandage, which, after the first few days, was intrusted to herself, it was found necessary to confine her again to bed, where in a short time she recovered.

CASE 5.—*Severe erythema læve of both legs.*—In the autumn of 1841 we saw, with Mr. Coulson, a lady of advanced age, affected with this disease. She was corpulent, of sedentary habits, had long suffered from œdema, and her present attack had lasted for several weeks, resisting the various modes of treatment which had been pursued. The skin of the entire surface of both legs was of a deep red tint, highly congested, and covered with a rough and exfoliating epidermis. Her tongue was foul, and her general health very much disturbed, so much so, indeed, that she was apprehensive for her life. For the purpose of relieving the congested state of the skin we recommended free scarification with the point of a lancet, to be followed by fomentation and bandaging. To this, however, she objected. We then ordered strict attention to position, painting the surface with tincture of iodine, and carefully adjusted compression by means of strips of soap plaster spread upon leather; the local treatment being assisted by an occasional aperient, and tonics. In the course of a few weeks she had entirely recovered.

CASE 6.—*Erythema læve, issuing in mortification and death.*—An aged woman complained of great pain and uneasiness in the left foot and ankle. There was a diffused patch of redness, with slight œdema, occupying the front of the ankle and the dorsum of the foot. Her tongue was not much altered, but her pulse was quick. We directed her to remain in bed, and apply fomentations to the limb, at the same time recommending her to the attention of a neighboring medical friend. In a few days the part became discolored, and sphacelus commenced, which extended rapidly up the limb as far as the groin. After death, the whole of the arteries of the limb were found to be solidified by calcareous deposition, and some of the smaller vessels were completely obstructed.

DIAGNOSIS.—Redness, bright at first and subsequently becoming purplish; slight elevation, sometimes with a tendency to sudden swelling; itching and tingling; and very slight, if any, exfoliation of the cuticle, unlike the decided desquamation of the eczematous affections; bruise-like stains on disappearance; these are the signs which distinguish erythema from other disorders of the skin. Erythema papulatum bears some resemblance to urticaria in size of prominence, in situation, and in the sensation of tingling pruritus; but there the likeness ceases; one is permanent for several days, the other, maintained only by muscular spasm, is lost in an hour; moreover, the papules of erythema are red, and the wheals of urticaria white and bloodless.

CAUSE.—The cause of erythema is debility, general and local; the general forms being assimilative, nutritive, and nervous; and the predisposing causes, derangement of digestion, derangement of uterine function, variations of climate, errors of air and exercise, alternation of seasons, rheumatic diathesis, hereditary diathesis, and irritating ingesta, such as certain articles of diet and certain medicines, for example, quinine and copaiba. Local erythema may result from heat and cold, irritants of all kinds, and friction; stimulation by the heat of the sun is a not infrequent exciting cause.

PROGNOSIS.—Erythema is rarely grave; but as it indicates a state of disorder of the economy, the health should be restored as quickly as possible. Its common duration is from one to three weeks.

TREATMENT.—As the most frequent of the predisposing causes of erythema are those which conduce to assimilative debility, the digestive organs and the uterine system call for our especial attention. Mild purgatives, salines, and subsequently bitters with the mineral acids, will be found to be the proper remedies in the majority of cases. Where the function of the stomach is principally at fault, the trisnitrate of bismuth, with liquor cinchonæ and infusion of orange-peel, will be useful; or the more decided tonics, quinine with sulphuric acid; or quinine with iron and citric acid. If the cutaneous disorder be associated with rheumatism, the iodide of potassium may be advantageously combined with the salines or bitters, according to the stage of the affection.

The symptomatic varieties of erythema require to be treated through the disease upon which they are dependent. The method of treatment must consequently vary in relation to circumstances. In some instances the antiphlogistic plan may be required, in others the irritation of mucous tissues must be soothed, while in others, again, it may be necessary to excite counter-irritation at a distant part. With the latter view, aloes combined with myrrh will be found an useful remedy, particularly in females.

When the system is reduced, and the powers are enfeebled, tonic remedies are especially indicated; bitters combined with acids are of great service, together with an appropriate regimen and the judicious use of exercise; after a course of these remedies, Fowler's solution may be commenced, in doses of three or four minims three times a day, either directly after or with meals. In chronic erythema arsenic is often very valuable.

Locally, the benzoated ointment of oxide of zinc will be found useful in the more irritable forms; and where there is œdema, an elastic cotton bandage, carefully applied. In erythema papulosum, tuberosum, and nodosum, a spirit lotion may be used, or a lotion or cerate of Goulard's extract. In erythema intertrigo and paratrimma, the parts should be washed with the juniper-tar soap, and afterwards dressed with the benzoated ointment of oxide of zinc, combined with spirits of camphor. In erythema paratrimma especially, the inflamed part should be pencilled with a liniment of white of egg and spirits of wine, and afterwards dressed with the unguentum resinæ flavæ; or, if there be any moisture of the surface, dusted over with pulvis cinchonæ.

Chronic erythemata are to be managed according to general principles; the excitement of the affected part is to be reduced in the first instance by soothing applications, and then astringents and stimulants are to be used. The *chapping of the hands* may be prevented and relieved by the use of a small quantity of honey, which should be rubbed into the inflamed part each time the hands have been washed, and then wiped off, so as to remove any stickiness that may remain. Glycerine may be applied in the same way, or the benzoated ointment of oxide of zinc.

Erythema of the nipples (chapped nipples) is best relieved by the application of the benzoated ointment of oxide of zinc made into a cream with spirits of wine or spirits of camphor; an ointment of nitrate of silver, containing from five to ten grains to the ounce; the tinctures of kino and catechu; infusion of oak bark or pomegranate; or lotion of chloride of lime. Other useful applications for chapped nipples are, a powder consisting of equal parts of borax and powder of gum acacia, which should be dusted frequently upon the cracks and excoriated surface; and mucilage of gum acacia. The latter should be pencilled on the tender part immediately after suckling, and the nipple protected with a leaden shield or limpet shell. We have also seen great benefit result from the use of collodion, which, judiciously applied, and assisted by other means, will be found an invaluable remedy. Collodion is a good defensive agent for protecting the tender skin from the effects of pressure and moisture.

It is judicious, in most cases, to wean the infant when the nipples are tender and chapped; but when weaning is objected to or inconvenient, a shield and teat should be applied, without interfering with the nitrate of silver ointment.

For erythema of the vulva and anus, the most soothing applications are, the superacetate of lead ointment, or the benzoated ointment of oxide of zinc with liquor plumbi diacetatis. Over these an evaporating lotion may be used, if requisite; and when the acute stage is passed, the milder ointments may be replaced by the nitrate of mercury ointment, more or less diluted, as the feelings of the patient may permit. The nitrate of silver ointment is also found to be of great service in some instances.

For chilblains, in their erythematous state, the treatment is friction with moderately stimulant liniments; such as the linimentum camphoræ, with chloroform; soap liniment and oil of cajeput; or a liniment composed of the contents of one egg, one ounce of spirits of turpentine, and one ounce of distilled vinegar, well shaken together.

PELLAGRA.

Syn. *Mal del sole; risipola lombarda; mal rossa; cattivo male; mal del padrone; male della vipera; scorbuto alpino; elephantiasis italica*, Mason Good; *lepra asturiensis*, Sauvages; *mal de la rosa; mal de misere; elephantiasis asturiensis*, Mason Good; *erythema endemicum*, Alibert; *raphania maistica*, Guerrichi.

Pellagra is an erythema affecting parts of the skin exposed to the sun, and associated with symptoms of disorder of the nervous system, cerebral, spinal, and organic. It is endemic in certain countries, for example, Italy, and especially Lombardy and Venetia, Spain, and some districts of France; makes its attack in the spring season; and is excited and aggravated by the heat of the sun, hence its synonym *mal del sole*.[1] The subjects of pellagra are for the most part peasants and agricultural laborers; and these people are probably predisposed to disease by some degree of debility induced by unwholesome or insufficient diet, and possibly by malaria. After prolonged and, perhaps, daily exposure to the sun for a certain space of time, or after working or sleeping in the sun, the individual experiences a sharp tingling and prickling pain in the exposed skin, accompanied occasionally with a sense of giddiness and nausea, and his gait is staggering when he attempts to walk. He is restless and feverish at night, and for some weeks or months he experiences loss of appetite, nausea, burning heat at the epigastrium and in the throat, diarrhœa, a frequent repetition of giddiness, sometimes disturbance of vision, insomnia, frightful dreams, noises in the head, fugitive neuralgic pains, muscular spasms, cramps, lassitude, and depression of spirits. Subsequently, in conjunction with the diarrhœa, there exists excessive appetite, with a clean but red and fissured tongue.

These symptoms continue with greater or less severity for three months, and gradually subside, leaving the patient, to all appearance, well; but he remains morbidly sensitive to the stimulus of the sun, the symptoms are instantly aggravated during the progress of the disorder, even by a momentary contact with the sun's rays; and on the approach of hot weather, the following spring, all the symptoms return, but with greater severity, to be repeated successively for a number of years until, in the end, they exhaust the powers of the patient, and cause his death. Besides being successive or remittent, the attacks of pellagra are progressive; they are more severe at every return; and, after a while, from being evanescent and temporary, they become fixed and permanent.

---

[1] Dr. G. M. d'Oleggio, of Venice, published a treatise on Pellagra in 1784 under the title of the disease of "vernal insolation."

The progressive aggravation of the symptoms in successively recurring attacks of the disease has led to its distinction into three stages. In the *first stage*, the fever is comparatively slight, the erythema superficial, the diarrhœa, the pains in the head, and vertigo, moderate. In the *second stage*, the symptoms are more severe and prolonged; the fever is greater; the erythema more confirmed, and attended with more decided desquamation, as also with the occasional appearance of vesicles, pustules, rhagades, excoriations, and scabs. The diarrhœa is more continuous, and accompanied with a red tongue and voracious appetite; the affection of the nervous system, namely, the pains in the spine and limbs, the trembling of the limbs, the pains in the head, and the vertigo, more distressing; there is a greater degree of despondency, more or less delirium, and increasing debility with emaciation. In the *third stage*, the disease assumes a persistent character; the emaciation is more marked; the complexion sallow; the skin squamous, incrusted, and attenuated; the diarrhœa, constant; and the appetite still voracious; the despondency and cerebral symptoms have also increased, sometimes assuming the character of dementia, melancholy, or mania; there is loss of motion of the limbs, with tremors and partial loss of sensation; loss of power of deglutition and speech; loss of vision; often convulsions, asthenia, exhaustion, and death.

On the skin the erythema presents a deep red color; sometimes in patches, and sometimes diffused; the surface is dry and parched; the substance of the skin attenuated; and the subcutaneous fat removed. The nutrition of the skin is evidently arrested, probably from paralysis of the trophic nerves; the integument, after a while, assumes the character of parchment; and, in consequence of its thinness, permits the tendons and veins to stand out in strong relief. When the erythema subsides, a deep melasmic stain is left upon the spot; but the skin never recovers its normal texture. In the early attacks of the disease, the affection of the skin is limited to redness of a deep tint, without swelling, a painful sensation of tingling and prickling, attenuation of structure, and some slight exfoliation of the epidermis. In subsequent attacks, desquamation of the epidermis is more decided; after that, dark colored crusts are formed upon the surface, and are accompanied with cracks and ichorous excoriations. In some instances, vesicles, phlyctenæ, and pustules, have been noted in association with the cutaneous affection.

The most important feature of the disease is the cerebral disturbance; this is not always primary, as in ordinary *coup de soleil*, but comes on gradually during the progress of the attack, as though it were a secondary consequence of the injury of the nervous apparatus of the skin; in like manner we must explain the rachitic neuralgia, the spasmodic cramps of muscles, the partial paralysis of motion of the lower limbs, and the irritability of the alimentary canal, inducing diarrhœa, and sometimes dysentery; the latter being a reflex nervous irritation. The affection of the brain is evinced by giddiness, vertigo, insomnia, noises in the head, and disturbance of vision; that of the spinal cord by muscular spasms, defective power of motion, and partial loss of sensation; and that of the organic nervous system, by nausea, voracious appetite, and diarrhœa. While, to the general disturbance of the nervous system we must refer the lassitude, the depression of spirits, and the mental aberration; the melancholy and dejection being often so great as to prompt to suicide. Stambio, one of the early writers on pellagra, remarks that the suicidal tendency very commonly takes the direction of drowning, a state which he terms "hydromania."

After successive annual repetitions of the disease, the diarrhœa is apt to become unrestrainable and colliquative, and the patient sinks from exhaustion (marasmus pellagrosus, tabes pellagrosa). Prior to this event, however, there exists a state of fever, which is accompanied with fetid perspirations, and sometimes with delirium. The features are drawn and anxious, marked with the deep furrows of age; and the complexion is pallid and muddy. Sometimes death is hastened by typhoid fever, and sometimes by dropsy of the visceral or cerebro-spinal cavities, and sometimes by softening of the brain and spinal cord. Dr. Peacock, who had an opportunity of seeing the disease in Italy in the autumn of 1862, remarks that "in the last periods of the disease the appearance of the patients was most characteristic. Their expression of countenance was usually desponding; they were thin and emaciated, pale and sallow, with sunken and glassy eyes, pale lips and tongue, and the latter was usually clean but fissured. The pulse was uniformly feeble and slow, 60 to 70 in the minute; the extremities, cold, tremulous, and almost powerless. Some could not raise themselves or walk; were incapable of leaving their beds, or were secured in chairs; but others who possessed greater power, when they attempted to walk, did so with a tottering step, with their heads bent forwards, their backs curved, and in a kind of run, as if constantly on the point of falling.[1]

The kinds of insanity consequent upon pellagra are stated to be, dementia, melancholia, and mania; of 310 cases admitted into San Servolo, the relative number of the three preceding forms of disease were 130, 95, and 82, two of the number presenting monomania. And the paralysis subsequently met with in association with the disease, is shown by Ballardini and Baillarger "to be identical in its symptoms and morbid appearances with the general paralysis of the insane."

Dr. Peacock determined the absence in pellagrous patients of struma or renal disease, and states the chief post-mortem appearances to be congestion of the alimentary canal, with a "peculiar thinning of the mucous membrane," reminding us of the similar condition of the skin and effusions into the serous cavities.

---

[1] Notes on Hospitals in Northern Italy, and on Pellagra, by Thomas B. Peacock M.D., F.R.C.P., in the British and Foreign Medico-Chirurgical Review, for January 1863.

CAUSE.—In the countries where pellagra is endemic, the disease is a grave affliction; Ballardini states the number existing in the Milanese provinces, in 1836, to have been 37,628, upwards of one-sixteenth of the population; while in the Milan hospital alone, the average number of pellagrous patients during the years 1832–42, was 636. The persons chiefly affected are agricultural laborers, in the proportion of nearly 90 per cent.; it attacks all ages and both sexes, and is clearly hereditary, the hereditary tendency being greatest on the mother's side. According to Calderini, the disease is most frequent between 30 and 50 years of age; and of 184 pellagrous families, representing 1319 individuals, nearly one-half suffered from the affection.

The action of the sun upon the skin, a sunstroke of the skin, must be taken to be only the exciting cause, while the predisposing causes are numerous in the shape of hygienic influences of various kinds, namely, exposure to malaria, poor and insufficient diet, and defective clothing and habitation. An almost universal diet in those parts of Italy affected with pellagra, is the Indian maize, and Peacock has collected evidence which goes far to prove that maize imperfectly ripened and dried generates a fungous mucedo, which may act as a poison on the blood and be the prime cause of the disease. He traces a relation between the first introduction of maize into these countries and the appearance of pellagra; he further shows the difficulty of ripening maize between the 42 and 46 degrees of latitude, the existence of pellagra where the maize is imperfectly ripened and dried, and its absence where the opposite conditions prevail; and he suggests that pellagra may occur from a similar unwholesome condition of the cereals in general. Ballardini detected the fungus in the groove of the germ of the seed in the form of a green pulverulent substance; and Cessati, who was the first to examine this substance with the microscope, found it to consist of small round diaphanous globules without sporidioles, and smaller than the cells of farina; and he named the fungus *sporisorium maydis;* while Guerreschi proceeds a step further, and distinguishes the disease produced in man as the raphania maistica.

PROGNOSIS.—While pellagra may be as certainly cured by removal from the pellagrous districts and the adoption of a better diet, as ague, it nevertheless happens, that amongst those who are unable to quit their native villages the disease is a severe affliction, and often fatal. Its ordinary duration is several years, but it would seem to be capable of extending its limits to almost any period; of a given number of patients in the hospital of Milan, the disease, according to Calderini, had lasted from one to three years in 114; from three to twelve years in 138; and from twelve to sixty years in 100. And Ballardini gives, as the results of his carefully prepared statistics of the pellagra in the Milanese provinces, the following facts: the number of cures amounted to 78 per cent., uncured 13 per cent., 9 per cent. suffered from mental diseases, 6 per cent. died from natural causes, while the figures 0.029 represent the number of deaths by suicide.

TREATMENT.—The treatment the most successful in pellagra, is that which may be reasonably deduced from the observation of the causes of the disease, namely, improved hygienic conditions, a sound diet of mixed animal and vegetable food, beer or wine, and tonic medicines, especially quinine with chalybeates. To this general plan may be added repose, warm bathing, and a careful avoidance of exposure to the sun.

ACRODYNIA.

Syn. *Erythema epidemicum.*

ACRODYNIA is an erythema of the palm of the hands and sole of the feet, attended with burning heat, pain, and numbness, with numbness of the limbs, pains throughout the body, and general disorder of the digestive and nutritive functions. This disease made its appearance in Paris in an epidemic form, in the year 1828, during a cold and damp summer, and continued the following year, subsiding on each occasion during the succeeding winter. It was first described by Cayol, and subsequently by Chomel and Rayer.

Acrodynia begins with symptoms of disorder of the digestive organs, for example, loss of appetite, nausea, weight at the epigastrium, sometimes vomiting, colicky pains, and diarrhœa. The eyes are suffused and sensitive; there is lachrymation and puffing of the face; and with these symptoms, or a little later, a patchy redness appears upon the palms and soles, sometimes extending upwards to the forearms and legs, and subsequently spreading more or less extensively over the rest of the body. The erythema is at first brightly red, but gradually becomes brownish and dark-red; while some of the patches have been compared to ecchymoses, and not unfrequently there is a dark-brown and even black discoloration of the epidermis from the deposit of pigment; moreover, there appear occasionally prominent papulæ, phlyctenæ, pustules, and œdema. After a time the cuticle exfoliates, and the exfoliation is repeated from time to time, the denuded surface being smooth and glossy, and of a bright red hue. Sometimes the exfoliation of the epidermis is accompanied with perspirations, and occasionally the cuticle of the whole of the palm or of the sole of the foot is shed in a single piece.

The erythema is attended with stinging and smarting pains, a sense of numbness, and an extreme burning heat, which is greatest during the night, and disturbs sleep. Not unfrequently the numbness in the limbs amounts to a partial paralysis, and is sometimes associated with loss of muscular substance and spasmodic cramps. Occasionally the sensibility of the palms and soles is excessive, and the pains severe, and in different instances the separate symptoms take on an extreme degree of intensity; sometimes the suffusion of the eyes runs on to conjunctivitis, and sometimes the gastro-intestinal symptoms are especially severe.

Acrodynia commonly lasts from a few weeks to several months, and is liable to relapse, but is rarely fatal except in aged persons. It resembles pellagra in some of its features, but is more acute, less liable to repetition, and manifests a more superficial injury of the organism.

The treatment adapted for its cure must be directed in the first place to the relief of the constitutional symptoms, while locally mild stimulants, and especially tar have been found of service.

ERYSIPELAS.

Syn. *Erythema erysipelatosum*, Mason Good; *febris erysipelatosa*, Sydenham; *dermatitis symptomatica*, Hebra; *rosa*, Sennertus; *ignis sancti Anthonii; rothlauf; haut-rose; erysipèle; risipola; St. Anthony's fire.*

Erysipelas is a specific inflammation of the skin and subcutaneous cellular tissue affecting a part of the surface of the body, and accompanied, and often preceded, by derangement of the digestive organs, and more or less severe fever. The local inflammation has a special disposition to spread; it is attended with swelling, a pungent, burning, and tingling heat, a sense of tension or weight in the part, and by a redness which disappears under pressure with the finger, to return so soon as the pressure is remitted. It is often accompanied with vesications containing a limpid amber-colored serum, which quickly burst, and form thin, dark-colored crusts; and the inflammation is apt to be communicated to the lymphatic vessels and glands. Erysipelas terminates generally in resolution with desquamation of the epidermis, sometimes in delitescence, or suppuration, and more rarely in mortification.

The disposition of erysipelas to spread is evinced by its habit of creeping onwards upon the neighboring skin, and subsiding on the part first attacked; and sometimes vanishing suddenly on one spot to appear upon another at some distance. It is this ambulant or wandering character, and the tendency to sudden disappearance, that has gained for two of its forms the names of *erraticum* and *metastaticum.*

The swelling is sometimes very moderate; at other times there is a degree of infiltration into the subcutaneous cellular tissue amounting to œdema, and with the œdema an interstitial infiltration into the corium, producing thickening and coarseness of the skin. An advanced degree of this serous infiltration gives rise to the development on the inflamed surface of vesicles, constituting *erysipelas miliare;* while larger vesicles or bullæ distinguish the forms known as *erysipelas phlyctenodes*, or *bullosum*, that which is marked by simple œdema being *erysipelas œdematosum.*

Erysipelas has a tendency to invade by preference certain regions of the body; for example, the head and face; next in frequency it is met with on the limbs and genital organs; and in newly-born infants is apt to attack the umbilicus and abdomen. It also manifests a remarkable difference in respect of depth, the forms heretofore referred to being superficial, while one form is distinguished by its invasion of the deep structures of the body as well as the skin, namely, *erysipelas phlegmonodes.* Another diversity in the forms of erysipelas has reference to its cause, the ordinary cause being constitutional, while a very dangerous form, *traumatic erysipelas*, has its origin in wounds, as in the erysipelas which comes on after surgical operations

Erysipelas generally runs a course of ten days to a fortnight or three weeks; the local inflammation commonly makes its appearance without premonitory symptoms; at other times constitutional disturbance precedes the inflammation of the skin for an uncertain period ranging between a few hours and two or three days; and the symptoms of general disorder go on increasing for four or five days longer, and begin to decline on the eighth or ninth day. In erysipelas phlyctenodes the bullæ are formed on the fourth or fifth day, each bulla having an existence of twenty-four hours before it bursts; and erysipelas capitis reaches its height about the fourth or fifth day, and its decline about the seventh or eighth.

The termination of erysipelas usually takes place by resolution: the swelling subsides, the redness disappears, the tenderness and pain cease, and the cuticle is separated by desquamation. The thin scabs formed by the desiccation of the cuticle covering the broken vesicles also desquamate in a few days.

The *constitutional symptoms* of erysipelas are those of invasion, course, and decline. The symptoms of *invasion* are: weariness and lassitude; depression of spirits; pains in the back and limbs; chills or rigors, with flushes of heat; headache and giddiness or drowsiness; thirst; loss of appetite; white, coated tongue; bitterness of mouth; nausea; often vomiting; weight and oppression at the epigastrium; diarrhœa or constipation; quick, and sometimes hard pulse, and hot dry skin. These symptoms are rarely if at all mitigated by the appearance of the inflammation of the skin, and are prone to take on more or less of a nervous character; the pulse, usually 100 to 120 in frequency, becomes soft and extremely quick; the tongue is brown and dry; sordes accumulate on the gums and lips, and there is more or less delirium. At the decline of the local inflammation, the bad symptoms either subside by degrees, and a diarrhœa or lithic acid sediment shows a return of normal energy of the organic functions or the patient falls into a state of coma from effusion between the membranes of the brain, or, asthenia, from exhaustion; and gradually succumbs.

Not unfrequently, at the close of the fever, there is some degree of hemorrhage from the mucous membrane, sometimes from the pulmonary or alimentary mucous membrane, and sometimes from the womb.

Simon observes, that in the early stage of erysipelas the urine puts on the inflammatory character. "It is frequently," Schönlein remarks, "loaded with bile-pigment, and is of a reddish-brown or red color. At the urinary crisis, fawn-colored precipitates are deposited, and the urine becomes clear." Becquerel made two quantitative analyses o the urine of a man, thirty-nine years of age, who had erysipelas of the face and a good deal of fever, his pulse being 112. The urine of the first analysis was of a deep yellowish red color, and clear; its specifi gravity being 1.021. That of the second was so deeply colored as t appear almost black, it threw down a reddish sediment of uric acid and had a specific gravity of 1.023. The first analysis was made o the fourth, and the second on the sixth day of the fever. The analys are as follows; Becquerel's analysis of healthy urine being placed for comparison in a third column:—

	Anal. 1.	Anal. 2.	Health.
Ounces of urine in 24 hours,	27.0	30.8	45.0
Water,	965.5	961.9	972.0
Solid constituents,	34.5	38.1	28.0
Urea,	12.5	12.7	12.1
Uric acid,	1.2	1.3	0.4
Fixed salts,	—	8.2	6.9
Extractive matter,	—	15.9	8.6
Specific gravity,	1021.0	1023.1	1017.0

"In a woman, aged forty-five years, with erysipelas of the face, whose pulse was 104 and full, the urine was very scanty, of a dark-brown color, strongly acid, threw down a yellow sediment spontaneously, and had a specific gravity of 1023.1. It contained—

Water,		961.7
Solid constituents,		38.3
Urea,	11.7	
Uric acid,	1.3	
Fixed salts,	9.2	
Extractive matters,	15.7	

In five cases in which the morning urine was daily examined with care, the characters of inflammation were present in a very high degree; the specific gravity varied from 1021 to 1025. In four of these cases the urine threw down a reddish sediment, and in two a little albumen was occasionally present."[1]

The VARIETIES of erysipelas may be arranged in two groups, general and local, as follows:—

GENERAL VARIETIES.

Erysipelas erraticum,
" metastaticum,
" miliare,
Erysipelas phlyctenodes,
" œdematodes,
" phlegmonodes,

LOCAL VARIETIES.

Erysipelas faciei,
" capitis,
" mammæ,
Erysipelas umbilicale,
" genitalium.

GENERAL FORMS OF ERYSIPELAS.

ERYSIPELAS ERRATICUM is the erratic form of the disease. It is rarely accompanied with much swelling, or with the development of vesicles. It occurs most frequently upon the head and face.

ERYSIPELAS METASTATICUM.—Metastasis is one of the dreaded phenomena of erysipelas, and the especial danger that is feared is metastasis or transfer of the inflammation from the skin to the brain.

---

[1] Simon's Animal Chemistry, vol. ii. p. 278.

This danger is, of course, very much increased when the seat of the disease is the head or face. The true explanation of metastasis is that which has already been discussed in connection with the probabilities of repercussion of eczema; a *causa morbi* exists in the economy, and some organ must be the sufferer; so long as the vital power is able to exert a conservative control, the disease will run its normal course in the organ already attacked, whatever that may be; but if the vital power be much weakened, then no human caution or contrivance can prevent the transference of the *causa morbi* from one organ to another, without any rational explanation being possible. The metastasis of erysipelas, says Dr. Watson, is rare; "I do not recollect to have seen it. But the extension of the inflammation, the supervention of delirium and coma, while the external inflammation continues, is of common occurrence."

ERYSIPELAS MILIARE ET PHLYCTENODES represent two degrees of effusion beneath the cuticle of the serous fluid already infiltrated into the tissues of the skin. In the slighter of the two, the serum is exuded in small quantity, and gives rise to vesicles of the size of millet-seeds (erythema vesiculare, Mason Good); in the other, the quantity of serum is greater, and the vesicles assume the character of phlycteuæ, or bullæ (erysipelas bullosum). The bullæ are commonly developed on the fourth or fifth day of the fever, and go on enlarging for twenty-four hours, when they usually burst. Their contents are sometimes pale and watery, and sometimes opalescent; more frequently they are amber-colored, and sometimes, when there is a tendency to dyscrasis of the tissues, they are purple, from intermixture of the coloring principle of the blood with the serum. When the bullæ burst, their base becomes covered with a thin scab, which, at first yellow, soon becomes brownish, and almost black.

ERYSIPELAS ŒDEMATODES is a modification, due to the accumulation of serous fluid in the subcutaneous cellular tissue; it occurs most frequently in the lower extremities, and sometimes in the organs of generation. When the inflammation subsides, the fluid is gradually absorbed.

ERYSIPELAS PHLEGMONODES (dermatitis phlegmonosa, Hebra) is more deeply seated, and more severe in all its phenomena, than simple erysipelas. The subcutaneous cellular tissue, the superficial and deep fascia, and the intermuscular fasciæ, are all involved in the inflammation, which, instead of being circumscribed like ordinary phlegmon, puts on the true erysipelatous character of spreading on all sides, and involving a considerable extent of tissue in destruction, and sometimes the greater part of a limb. It occurs most frequently in the extremities, but may attack any part of the skin; and runs on to suppuration, and commonly to gangrene of the cellular tissue and fasciæ, *erysipelas gangrænosum.*

The *local* signs of phlegmonous erysipelas are, redness, swelling, hardness, extreme tenderness, and an acute burning pain; when, at about the fifth or sixth day, suppuration is established, the pain is throbbing, an obscure fluctuation is felt, and pressure with the hand communicates a boggy sensation. When sphacelus is set up, the color of the skin changes to purple, or assumes a livid tint. But when the case is disposed to terminate in resolution, an amelioration of the symptoms takes place at the fifth or sixth day.

The *constitutional* symptoms of erysipelas phlegmonodes are the same as those of erysipelas simplex, but more severe; delirium is not uncommon, the tongue is dry and brown, and there are sometimes diarrhœa and profuse perspirations.

LOCAL FORMS OF ERYSIPELAS.

ERYSIPELAS FACIEI is a serious form of the affection, as it involves parts of high organization, and closely associated with the nervous system and brain. The inflammation begins at the root or side of the nose, in the ear, or at the border of one of the apertures, and spreads over the whole face, swelling the features to such an extent as to renthem barely recognizable. The eyelids, the ears, and the lips are greatly tumefied, the inflammation is apt to extend to the conjunctiva, and to the mucous membrane of the nose, mouth, and throat, producing blindness, deafness, and obstruction of nasal respiration, and often involving the parotid and submaxillary glands, and occasioning suppuration among the deep tissues of the neck. The constitutional symptoms are very severe: there is violent headache, sleeplessness, restlessness, delirium, and finally, coma. Sometimes death results from exhaustion or asthenia; and sometimes from apnœa, in consequence of obstruction of the glottis by infiltration of the mucous membrane.

ERYSIPELAS OF THE SCALP is usually the consequence of a wound (traumatic erysipelas) and occurs in about a week or ten days from the reception of the violence; the integument is œdematous, smooth, shining, and very sensitive, the inflammation is apt to run on to suppuration and gangrene of the cellular and fibrous tissues, and not unfrequently the inflammation is transferred to the brain.

ERYSIPELAS OF THE MAMMA is apt to assume the phlegmonous character, in consequence of the presence of the large quantity of cellular tissue which enters into the structure of the female breast: suppuration takes place, and burrowing abscesses are formed, with gangrene of the fibrous tissues.

ERYSIPELAS OF THE UMBILICAL REGION occurs in young infants (erysipelas neonatorum), from mismanagement of the umbilical cord, particularly in crowded and ill-ventilated public institutions, and under the influence of an epidermic malaria. The inflammation spreads more or less extensively over the whole of the abdomen, and frequently extends to the organs of generation.

ERYSIPELAS OF THE EXTERNAL ORGANS OF GENERATION, both in the male and in the female, is peculiarly painful and difficult of management, on account of the great swelling which occurs, the inconvenience of keeping the parts clean; of applying dressings; and the great disposition to suppurative cellulitis and gangrene. It is most commonly seen in connection with the metastatic form of the disease.

DIAGNOSIS.—The distinguishing characters of erysipelas are, a deeper affection of the tissues than occurs in erythema, a greater amount of tumefaction, a proneness to spread, and especially the more severe constitutional symptoms. Erysipelas phlegmonodes is known by hardness, which indicates a deep implication of tissues, a greater amount of pain, and the suppuration of the subcutaneous tissues.

CAUSE.—The previous consideration of erythema has taught us that a derangement of the digestive functions may be sufficient to excite an inflammation of the skin; so in the present instance we must have recourse to a similar explanation in some instances of erysipelas; for example, in idiopathic and traumatic erysipelas. In other cases, erysipelas appears to be referable to malaria, and sometimes to infection and contagion, and is apt to prevail epidemically. Puerperal fever would seem to be one of the sources of the infection of this disease, and erysipelas and puerperal fever are reciprocally transmissible. The predisposing cause of the disease is debility, and the remote predisposing causes, those conditions that tend to lower the tone of the system and the energy of the vital powers; for example, anxiety, affliction, and exhausting excesses of every kind. Some persons seem to possess an erysipelatous diathesis, and in such individuals the most trivial wound, such as a scratch with a pin, or the bite of a leech, or a gust of wind, are sufficient to induce an attack. One of our friends has been subject to attacks of erysipelas of the face and head every spring and fall for sixteen years. On the last occasion he had been prevented from dining at his usual hour, and late in the evening, and somewhat exhausted by hunger and fatigue, he indulged in an overfull meal. In the night he was seized with diarrhœa, but was well the next and two following days. On the evening of the third day the side of his face and neck was chilled by the air while riding in a railway carriage, and on the next morning he became aware of a seizure of his old enemy. The erysipelas began in the lobe of the ear and the integument immediately behind it, and travelled round the back of the neck to the opposite ear, and thence along the forehead and across the left eye to the root and right side of the nose, where its progress was arrested. It also extended to the summit of the head. The attack was mild, and he was well in ten days.

PROGNOSIS.—Erysipelas being always serious, and often dangerous, demands the utmost care, and is generally of doubtful prognosis; and this is especially the case with some of its forms; for example, erysipelas faciei et capitis, and erysipelas phlegmonodes.

TREATMENT.—The treatment of erysipelas presents the usual two indications, constitutional and local; the first being directed towards the subjugation of the fever, the second to the relief of the local affection.

Erysipelas being essentially a disease of debility, of asthenia, and its progress being marked by that form of morbid inflammation which is termed irritability, we have to bear in mind the necessity of sustaining the vital powers, and of putting in practice a conservative plan of treatment. All that is signified in the expression "regulate the digestive organs and secretions," must be accomplished in the first instance and quickly, that no fermenting irritant may be allowed to exist in the alimentary canal, and no torpidity of operation of the liver or kidneys complicate the future progress of the case; moreover, we gain another point by this preliminary clearance of the alimentary system; we excite a derivative action, which is an important element in the treatment, while we perform artificially that which nature would otherwise neglect. Nevertheless, we must not fail to keep in mind the asthenic nature of erysipelatous inflammation, and the necessity of a strictly conservative policy in its management.

The remedies the best suited to the regulation of the digestive organs and secretions, are a full dose of calomel with the compound extract of colocynth, say two to four grains of the former, with six to eight of the latter, and two of extract of hyoscyamus, followed after a lapse of twelve hours with a senna or rhubarb draught. If there be any objection to calomel, half a grain of podophyllin may be substituted in its place. When the bowels have acted freely, the tendency to constipation which is apt to succeed the use of purgative medicines must be corrected, if necessary, by the daily exhibition of a mild aperient. The derivative action once established must be sustained; the digestive mucous membrane, once prompted to a natural action by remedies, must not be permitted to relapse into a sluggish state; but we must be particularly cautious to avoid any unnecessary irritation of the alimentary canal.

If the fever run high, we may find it necessary to have recourse to effervescent salines with ammonia, or to use the neutral salt sulphate of magnesia as our laxative; or administer the chlorate of potash, dissolved in water or barley-water, as the daily drink. One drachm of this salt may be taken in the twenty-four hours.

But the moment the alimentary canal is pronounced to be free, we must be ready with our tonics; they may be conjoined with aperients, as in the combination of the sulphate of quinine with sulphate of magnesia; or they may be administered independently. We may select bitters with the mineral acids; cinchona with sulphuric acid; or the citrate of iron and quinine. But there is one tonic which, above all others, is suitable for erysipelas, in fact is declared to be specific, and, as far as our experience is concerned, seems to be literally so; namely, the tincture of the perchloride of iron.

The chalybeate treatment of erysipelas was recommended very strongly by Hamilton Bell and Charles Bell in 1851;[1] and by Dr. George W. Balfour in 1853.[2] Mr. Hamilton Bell was led to the adoption of the remedy under the belief that "in erysipelas the capillary vessels are in an atonic state," that, in fact, they are "inert tubes." The tincture of the perchloride of iron may be administered at all ages, and in every stage and variation of the complaint. In the beginning the bowels should be relieved of any irritating ingesta, and subsequently they should be kept properly regulated. In mild cases the adult dose is fifteen minims in an ounce of water every two hours; in severe cases, twenty-five minims; and in infants and children, two minims and upwards; and these doses should be persevered with until the fever is subdued. It is important that the medicine should be administered with regularity, with a view to saturate the system as speedily as possible; the point of saturation being the moment when the remedy exerts its great curative power. It removes pain, lessens the heart's action, cleans the tongue, and acts as a diuretic; it is admissible in every stage of the fever, even in high delirium; it never produces headache, but relieves it; it arrests suppuration in phlegmonous erysipelas, and brings about a cure in less than a week.

---

[1] Edinburgh Monthly Journal, 1851, vol. xii. p. 497. "The Treatment of Erysipelas by the Muriated Tincture of Iron;" a paper read before the Medico-Chirurgical Society of Edinburgh, by G. Hamilton Bell, F.R.C.S.E., and Charles Bell, M. D.

[2] Monthly Journal of Medical Science, vol. xvi. 1853, p. 426.

Ammonia is a favorite remedy in erysipelas with some practitioners, and in all its forms; the citrate and acetate as an antiphlogistic remedy, and the carbonate as a specific. The latter may be administered in doses of five grains every two or three hours by itself, or combined with cinchona.

Sedatives are also valuable when great irritability prevails, and when they really act as sedatives, and not, as too frequently happens, as excitants of the brain and stimulants. Aconite and belladonna have gained a reputation in erysipelas, and so also have hyoscyamus, morphia, and the liquor opii sedativus. If belladonna answer the purpose, we should give it a preference, on account of its known aperient effect on the bowels when administered in very small doses, say an eighth of a grain of the extract every six or twelve hours. But in matters of detail, such as doses, the practitioner must depend on his own judgment; all we can hope to do is to lay down general principles, and point out what remedies have the credit of being the best.

Another department of the constitutional treatment is diet; a milk diet with farinaceous puddings, then eggs, then broths, next fish, and afterwards poultry. For drinks, toast-water and barley-water. To this, which is the ordinary antiphlogistic diet, may require to be added wine, with a view to support the vital powers of the sick person. The quantity may be six to twelve ounces of sherry or port wine in the day, according to its effect and according to the previous habits of the patient; and at proper intervals.

Dr. Robert Williams remarks with regard to the treatment of erysipelas: "The mode, then, in which I am in the habit of treating idiopathic erysipelas, whatever may be the part affected, or with whatever symptoms it may be accompanied, is as follows: The patient is put on a milk diet, the bowels gently opened, and from four to six ounces of port wine, together with sago, allowed daily. This mode of treatment it is seldom necessary to vary throughout the whole course of the disease; for the delirium, if present, is generally tranquillized; if absent, prevented; the tongue more rarely becomes brown, or only continues so for a few hours; while the local disease seldom passes into suppuration or gangrene. In a word, all the symptoms are mitigated, and the course of the disease shortened. I have pursued this system for several years, and I hardly remember a case in which it has not been successful."[1]

---

[1] Page 284.

This author records several remarkable instances of the advantages of his method of treatment. He does not limit the quantity of wine to that above stated, but in more severe cases, when the local disease still continues to extend, and the delirium to augment, he increases the wine to eight ounces, and adds to it the influence of quinine. "Two cases of erysipelas," continues the author, "not less instructive, were recently treated in St. Thomas's. The patients were both stout, healthy young women, and nearly of the same age; the seat of the disease also was the same, on the head and face, and they suffered equally from delirium, so that the difference between them, if any, was scarcely distinguishable. For the one, four ounces of wine were prescribed on the Saturday, and there appeared no sufficient reason to increase the quantity on the Monday; but between Monday and Thursday, the day on which I next saw her, she had so sunk that it was impossible to recover her. The other case was admitted about three days later, and, in the first instance, only four ounces of wine were prescribed for her; but, warned by the fate of the former person, although she was highly delirious, I immediately increased the wine to eight ounces, and added also two grains of quinine every six hours. Under this treatment she rapidly recovered, so much so, that in four or five days it was thought practicable to reduce the wine to its original quantity, or to four ounces. But on this reduction being made the disease immediately returned, and it was once more necessary to raise it to eight ounces, and the patient now rapidly recovered."

Mr. Grantham, of Crayford, in Kent, a successful practitioner and original thinker, suggests the propriety of making early observation of the state of the urine in erysipelas. "I begin," he observes, "with large doses of carbonate of ammonia, spirits of ammonia, and camphor mixture, as an alkaline mode of treatment, which is generally indicated in the early stage of the inflammation; but towards the sequel of the disease a contrary mode of treatment is necessary, namely, small doses of sulphate of magnesia, with full doses of the acidum sulphuricum aromaticum. The diet should be liquid and nutritive, with a full proportion of common salt; and narcotics should be avoided unless indicated by an alkaline state of the urine." It must be remembered that Mr. Grantham's field of observation is a healthful neighborhood, remote from the causes of depression which exist in towns and cities. In the latter, sedatives appear to form as essential a part of the treatment as stimulants. The dose of carbonate of ammonia may be as much as five or six grains every three or four hours.

By some practitioners an emetic has been strongly recommended in the outset of the fever, and followed up during its progress by small doses of tartarized antimony. The excitability which accompanies the fever is to be calmed by sedatives, such as hyoscyamus and morphia, as circumstances may suggest, the latter remedy being frequently necessary at night, and in the more advanced stages of the disease. Two valuable and important medicines in erysipelas are aconite and belladonna; both of these remedies act by reducing the excitement of the arterial system, and procuring rest. The extract of aconite is especially useful in checking the heart's action, and promoting cutaneous transpiration, and for this purpose should be administered in half grain doses every four hours. Liston remarks, that after the aconite has performed its office, the extract of belladonna, in doses of one-sixteenth of a grain, is productive of the most beneficial effects.

In erysipelas about the head and face, the feet and legs of the patient should be immersed in a mustard bath, and mustard poultices or blisters applied to the calves of the legs.

The LOCAL treatment of erysipelas is of two kinds, *palliative* and *curative;* the former being intended to relieve symptoms, namely, the heat, the tension, and the pain; the latter to set up a new action, and supersede and alter the quality of the inflammation. The remedies suited to the first of these purposes are: sedative fomentations, dredging with flour, and inunction with lard; the second purpose is attained by pencilling the surface with a solution of nitrate of silver. As a general rule, cold and chilling applications are objectionable; sloppy remedies are equally so; and both these inconveniences are obviated by inunction with lard, which we regard as by far the best palliative treatment of the disease. The manner of applying this admirable remedy, which we consider to be as thoroughly specific for outward use as is the tincture of the perchloride of iron for internal administration, we shall explain in the words of the surgeon[1] who first called our attention to its use: "My plan is to relax the skin with hot water or steam fomentations, and after each fomentation to saturate the inflamed surface with hot lard." He then covers the part with a sheet of cotton wool, and keeps the wool in its place by means of a bandage not too tightly applied.

When fomentations are used, they should be laid on by means of a fold of flannel saturated with the hot solution, and covered with oiled silk or gutta percha; or the fotus, if substantial, as in the case of chamomile flowers or hops, may be applied in a muslin bag. But these remedies are in every way inferior to the dressing with lard and cotton wool.

In severe cases the congestion of the vessels of the skin may be relieved by puncturing the surface very freely with the point of a lancet, and afterwards using warm sedative lotions and fomentations of chamomile and hops. This practice was pursued by Sir Richard Dobson for many years, and always with the most favorable results. He observes that the punctures heal in the course of a few hours, that he makes them on every part of the body, and that he never saw any ill consequences result. Sir Richard Dobson was in the habit of making from ten to fifty punctures, about a quarter of an inch in depth, on the inflamed surface, and repeating the operation two or three times a day, as the case appeared to demand. Liston advocates the same plan. We have sometimes practised this method in the local treatment of erysipelas, and always with good effect. It is remarkable how quickly the tension and pain are diminished, and the tumefaction reduced.

---

[1] John Grantham, of Crayford, Kent.

The relief afforded to the inflamed surface by inunction and puncture must be referred to two principles altogether different from each other; the one being, so to speak, endosmotic, the other exosmotic. But a substance which has been recently employed as an application to the skin, namely, collodion, is known to possess both these properties in conjunction, and, among the numerous experiments which have been made of its virtues, has been found to be a valuable topical agent in erysipelas, compressing the surface, and so relieving tension and pain; constituting an impermeable varnish, and so preventing cutaneous oxygenization of the blood, and the development of caloric which results from that chemical combination. As the purpose of the collodion is to form an impermeable covering, it should be applied with a brush over the entire of the inflamed surface, and repeated as frequently as may be necessary.

The *curative* local treatment consists in blistering the inflamed surface by means of the application of a strong solution of nitrate of silver. Mr. Higginbottom, of Nottingham, who is the author of this plan, directs that the solution should be applied freely by the aid of a dossil of lint attached to a piece of stick, and not only to the inflamed part, but to the sound skin bordering it, to the extent of an inch or more, if the case be severe. The solution should be used more freely in bad than in slighter cases. The inflammation rarely travels beyond the limits of the caustic, and even when it does, is easily controlled. Mr. Higginbottom considers the line of nitrate of silver drawn around the circumference of the inflammation as of very little use, and notes that on the scalp the solution rarely produces vesication. The caustic solution is equally applicable to phlegmonous and simple erysipelas. After the use of the caustic solution, we are in the habit of smearing the surface with lard and covering it with cotton wool, as in ordinary lard inunction.

Mr. Higginbottom gives the following statement of his plan:—

"The part is first to be washed in soap and water, to remove any oily substance from the skin, and then is to be wiped dry; the inflamed and surrounding skin is next to be moistened, and a long stick of the nitrate of silver is to be passed over the moistened surface, taking care that not only every part of the inflamed skin should be touched, but the surrounding healthy skin, to the extent of an inch or more beyond it, in severe cases. The nitrate of silver may then be passed over these surfaces once, twice, thrice, or more times, according to the degree of inflammation; once in slight cases, twice or three times in common cases, and more frequently if quick vesication be required." During the last eleven or twelve years Mr. Higginbottom has found a solution of eight scruples of nitrate of silver with twelve drops of nitric acid in an ounce of water, more convenient than the solid salt. He regulates the application of the solution according to the degree of severity of the local inflammation, and prefers a dossil of lint, tied on the end of a piece of stick, to a camel's-hair pencil, for its diffusion over the surface. "The success of the nitrate of silver in external inflammation depends upon its strength and its proper application. The method of applying it by some practitioners appears to me to be quite [illegible] with the remedy. Instead of covering the whole inflamed surface and the surrounding healthy skin with the nitrate of silver, [illegible] over the whole of the inflammation, they simply apply it around the inflamed surface, a mode of proceeding which has seldom the power of even preventing the spreading of the disease or the further progress when the inflammation itself is unarrested. Sometimes, even after the most decided application of the nitrate of silver, the inflammation may spread, but it is then generally much feebler in character, and easily checked by the repeated application of the remedy." "I consider the application of the nitrate of silver as perfectly safe. I have seen no case of metastasis or any other bad effects from the use of it during upwards of twenty years."[1] Mr. Higginbottom further recommends that where erysipelas extends to the scalp, the head should be shaved, in order that the extent of the disease may be fully ascertained, and that the solution may have a fair chance of completely covering it. It should be applied very freely on the scalp, where, he informs us, "it scarcely ever produces vesication."

[illegible] has used, with great success, an ointment composed of nitrate of silver and lard, in the proportion of from two to four drachms of the salt to an ounce. This is applied night and morning to the inflamed skin, and for a small space beyond it, and a thin layer is left on the surface.

The nitrate of silver is an excellent means of limiting the extension of the disease, by encircling the inflamed part with a line drawn with a moistened stick of the caustic. When an extremity is attacked, the [illegible] must extend completely around the limb, above the affected part; and if this simple manoeuvre be properly performed, the inflammation will, in many cases, be limited to the part first attacked. Nitrate of silver appears to act by exciting an effusion of lymph and adhesive inflammation in the line of its application, which thus forms an obstacle to the propagation of the exanthema; upon the same principle, a narrow or linear blister has been used to form the [illegible], but whether it possesses any superiority over the nitrate of silver is very doubtful. The erratic form of erysipelas may frequently be [illegible] to the spot originally affected, by the application of a blister; and this is the practice usually resorted to for the purpose of recalling the disease where it has suddenly disappeared by metastasis.

[illegible] recommends a solution of sulphate of iron, in the proportion of an ounce to the pint of water, as a local application in erysipelas. This solution, he remarks, produces a sudden improvement in the patches and causes their decline in one or two days. As frequently as new patches make their appearance, they are to be treated in the same manner, until the constitutional morbific influence is exhausted. In situations where a lotion would be inconvenient, this surgeon employs an ointment, containing a drachm of the salt to an ounce of lard.[2]

Dr. Fahnestock, of Pittsburg, speaks in great praise of pure creasote as a local application in erysipelas. It should be sufficiently strong to render the cuticle white immediately it is applied, and should be pencilled over the whole of the inflamed surface, and for a small space beyond it. In phlegmonous erysipelas, the application should be made more frequently than in the superficial kind, and a cold bread poultice or compress, moistened with a solution of creasote, kept on the part. When the mucous membrane of the mouth or fauces is affected, he uses a solution of nitrate of silver, of the strength of half a drachm or a drachm to the ounce.

---

[1] Lancet, vol. ii. 1843, p. 515.

[2] Gazette des Hôpitaux, May 11, 1848.

Dr. James Arnott advocates congelation as a local remedy for erysipelas, and adduces numerous cases as examples of its success.

In the vesicular form of erysipelas, the bullæ should be punctured with a needle and gently pressed with a sponge squeezed out of warm water, in order to absorb the serum and flatten the raised cuticle upon the surface of the corium. When this has been accomplished, the inunction and cotton wool may be reapplied.

In erysipelas of the scalp, it is often necessary, for the purpose of relieving tension and pain, to make an incision through the inflamed tissues down to the bone, and in erysipelas phlegmonodes, one or two incisions are required to liberate the pus and sloughs, and especially to ease the pain which is created by the diffusion of pus beneath the fasciæ. The incision has the double effect of giving exit to pus and sloughs, and also of emptying the vessels of the congested skin. After incision, the parts must be covered with a poultice and placed in a position favorable for the escape of the discharges.

URTICARIA.

Syn. *Febris urticata; enanthesis urticaria*, Mason Good; *cnidosis*, Alibert; *fièvre ortiée porcelaine; urticaire; nesselsucht; nesselfieber; nesselauschlag; porcellanfriesel; wiebelsucht; nettle-rash.*

Urticaria, or nettle-rash (Plate VII.), derived from *urtica*, a nettle, is an ephemeral congestion of the skin, accompanied with a burning and tingling itching, with more or less redness, and with the development on the red ground of small elevations or wheals, which are sometimes round and oval, and sometimes elongated in narrow stripes. The rash is sometimes preceded by symptoms indicative of considerable derangement of stomach, and sometimes, in a chronic form, is wholly unaccompanied by constitutional symptoms. It is not contagious.

The resemblance of urticaria to the effects of stinging the skin with a nettle is twofold; firstly, the hot, burning, and tingling itching is similar to that of the sting of a nettle; and, secondly, the white elevations or wheals are due to the same cause, namely, spasm of the muscular structure of the corium. In lichen urticatus we have had the opportunity already of noticing the influence of muscular spasm of the skin in the production of papulæ; it is seen also in the spasmus periphericus, which occasions that common physiological condition of the skin, cutis anserina; and the white wheals raised upon the integument by the lash of the whip in flogging, or by the bite or sting of an insect, are the result of a similar operation. In some persons the skin is so sensitive and the muscular tissue so irritable, that wheals may be produced at any moment by touching it with a feather, or lightly with the finger. We may thus sometimes trace figures and letters upon the skin, or write our name, and the figures and the writing will instantly stand up in relief in the form of white wheals. We have sometimes noticed in the white wheals of urticaria an alternate contraction and relaxation of the muscular structure, which gave them the appearance of pulsation, or of an ebb and flow of blood in the capillary vessels.

Urticaria is sometimes transitory and sometimes very enduring, lasting even for years. We have thus a kind of division of the disorder into *acute* and *chronic.* The acute forms are preceded and accompanied by symptoms indicative of great derangement of stomach, and its sympathetic influence on the nervous and vascular system, producing a temporary fever; while the chronic forms exhibit no traceable disorder of the economy.

In the acute form of urticaria there is generally a little swelling, reminding us of the swelling of erythema, and in a less degree of that of erysipelas; and at the close of the rash there is sometimes a little œdema. But the most striking character of the rash differs essentially from anything observable in either one or other of those affections, namely, the nervous irritation that occasions the muscular spasm. In the acute forms also, the skin is somewhat altered in color at the decline of the congestion; it is purplish and yellowish, like a bruise; and if the congestion have run high, as in urticaria ab ingestis, there will probably be some degree of furfuraceous desquamation of the affected part.

Its VARIETIES are founded on its occasional febrile character; on the confluence of its wheals; on its evanescence or permanence; and on the extension of its local symptoms deeply into the skin and subcutaneous tissues, and involving a greater breadth of muscular tissue in spasmodic action. They are as follows:—

ACUTE.	CHRONIC.
Urticaria febrilis,	Urticaria evanida,
" ab ingestis,	" perstans,
" conferta.	" subcutanea,
	" tuberosa.

URTICARIA FEBRILIS is distinguished by the occurrence of symptoms denoting great irritation of the stomach; for example, weight and fulness at the epigastrium, nausea, faintness, thirst, white tongue, quick pulse, pain in the head, and general lassitude and prostration. After an interval of one or two days there is an outburst upon the skin of a number of irregular blotches, vividly red, covered with white wheals, and intensely itchy. This outbreak commonly relieves the gastric symptoms; but as the cutaneous irritation subsides, the internal symptons return. The heat and tingling and itching of the skin are always worst at night, and the internal and external symptoms are apt to alternate for a week or ten days before they decline and disappear. Willan narrates a fatal case of urticaria febrilis; the patient had been intemperate, and was much out of health.

URTICARIA AB INGESTIS is the name given to an attack of febrile urticaria dependent on the presence in the stomach of some irritant or deleterious article of food. The symptoms are apt to come on a few hours after having partaken of the noxious aliment, sometimes in the night, encouraged by the suspension of digestion during sleep, and are very severe, and occasionally fatal. They commence with a a feeling of fulness and weight at the epigastrium, with nausea, faintness, giddiness, and sometimes vomiting and diarrhœa. There is a prickling in the throat, with a sense of constriction of the fauces, cough, a feeling of impeded respiration, and swelling of the tongue. From the mucous membrane the irritation spreads to the skin; the nose, the lips, and ears are swollen, hot, and itchy; the features are enlarged; the rash extends to the trunk and limbs, and is particularly troublesome in the neighborhood of the joints. The rash sometimes continues to be annoying for a day or two, but more commonly subsides after a few hours, and is followed by a furfuraceous desquamation of the cuticle.

These severe symptoms are not necessarily the consequence of a highly irritating or poisonous principle present in the food, but are sometimes induced by the most harmless articles of diet; for example, rice, eggs, pork, goose, fruit, &c. A more frequent cause of urticaria is shell-fish, and particularly mussels.

Willan has put on record a case evincing a disposition to periodicity on the part of urticaria, and we have met with a somewhat similar instance. In Willan's case, the rash recurred weekly for a considerable time; in our own, it reappeared once at the end of a week.

URTICARIA CONFERTA (Plate VII. B).—Instead of being scattered, as they commonly are, the wheals of urticaria are sometimes collected into thick clusters, and give rise to the present variety. This diversity of character is chiefly due to the constitution and susceptibility of the patient, and not to any difference of cause. Its symptoms bring it into the group of the acute forms, bearing some resemblance to those of urticaria febrilis.

URTICARIA EVANIDA ET PERSTANS (Plate VII. A A) represent the chronic form of the disorder, in which there are no febrile action and no symptoms of gastric derangement, and wherein the disease continues for an indefinite period of time. In the evanescent form, *urticaria evanida*, the rash is accompanied with tingling and itching, is apt to come out several times in the day, and is very troublesome at night. It appears also under the influence of exercise, after taking meals, and on mental emotion. After a continuance of a few hours, the rash disappears, and no trace can be discovered of its attack. In the persistent form *urticaria perstans*,[1] the general symptoms are the same, but the rash, with its crop of irritable wheals, continues for several days or weeks, and sometimes for months. The separate wheals do not remain the whole of the time, but are reproduced in succession ; and the entire eruption acquires thereby the character of p manence.

---

[1] Portraits of diseases of the skin, Plate I. L.

URTICARIA SUBCUTANEA.—Under this name Willan has descri an affection in which the tingling, burning, and itching are pre without the wheals; or the latter are occasional and developed i minor degree. It is not uncommon in diseases attended with a var of symptoms to meet with examples in which one or other of t symptoms may be in excess, while another is wanting. Under t circumstances, if the existing symptom be characteristic, we ado as the type of the doubtful affection. In the present variety, sensation of tingling and stinging, and of puncturing with fine nee issuing from within, are characters of urticaria, while the rest of symptoms point to some more deeply-seated morbid change in nervous system. The affection is rare. Willan remarks that partial, and that he had seen it only on the loins and thighs, and s times on the arms; but he conceives that it might spread over greater part of the body.

URTICARIA TUBEROSA is the result of a blending of the symp of erythema tuberosum and nodosum with those of urticaria; deep-seated morbid alteration of the former is combined with muscular spasm and pricking and tingling itching of the latter. tuberous prominences are of large size, varying in diameter bet half an inch and two inches, few in number, flat on the surface, to the touch, the hardness being felt to sink deeply into the subst of the limb, and extremely tender. They rise in a few hours, monly in the course of the night, and when they subside they l behind them a green and yellow stain like that of a bruise. disorder is rare, and is only met with in persons beyond the mi age, whose constitution is debilitated by intemperance and ch disease. The most marked example that we have seen was in man of gouty diathesis, who was at the same time suffering œdematous eczema of the lower limbs. On his thighs were sev of these tubera, and between them the greenish-yellow stains of t that had dispersed. Their outbreak during the night was accompa with severe stinging and itching.

PATHOLOGY.—Dr. Day, in his translation of "Simon's An Chemistry," observes: "The urine, in a case of urticaria tubercu has been analyzed by Scherer. The patient was a young man, likewise suffered from rheumatism. The urine was discharge very small quantity, often not more than five or six ounces in f eight hours. It was clear, of a brownish-red color, very acid, an specific gravity was 1028. It contained in 1000 parts—

Water,		931.58
Solid residue,		68.42
Urea,	30.46	
Uric acid,	0.74	
Alcohol extract, with much lactic acid,	21.24	
Water extract,	4.92	
Alkaline salts,	8.03	
Earthy phosphates,	2.02	

The most remarkable points in the constitution of the urine are the large amount of earthy phosphates, and the excess of free acid."

In a case of urticaria, in which the urine was analyzed by Dr. Maclagan, its composition was found to be as follows:—

Urea,	6.91
Uric acid,	0.05
Inorganic salts,	12.03
Organic matters and water,	981.01

"The chief peculiarity in the present case was a deficiency in the ordinary characteristic ingredients of the urine, the urea and uric acid. This could not arise from mere excess of water: first, because the urine was not excessive in quantity; second, because the inorganic salts were above the normal standard, whereas, had the water merely been in excess, they, too, ought to have indicated a diluted condition of the urine. Dr. Maclagan ventured, therefore, to propose, as the pathological view of the case, that the defect here was merely a deficiency of the urea and uric acid; in short, a want of what modern chemists call the products of transformation of the tissues, and that the retention in this way in the system of matters which ought to be eliminated from it might be the cause of this cutaneous irritation, especially occurring, as it did, after meals."[1]

With the view of modifying the imperfect transformation of tissues here referred to, the patient was treated with colchicum, upon which the specific gravity of the urine was found to have risen to 1029.9, and its composition to be as follows:—

Urea,	20.36
Uric acid,	0.50
Inorganic salts,	12.72
Organic matter and water,	966.42

The conclusions deduced from this observation are:—

1. "That urticaria is intimately connected with a deficiency of the organic salts of the urine, and their probable retention in the system.

2. "That the colchicum has an action capable of restoring the deficient salts, and thus curing the disease.

3. "Rheumatism and urticaria, and purpura and urticaria, are frequently found to be present together. They are also benefited by the use of colchicum. It may be safely asked, Do they not depend on the same common cause, namely, the presence of those salts in the blood? Such an inference has been applied in the case of rheumatism."[2]

DIAGNOSIS.—The distinguishing signs of urticaria are, the tingling, burning, pricking, and stinging sensations; the development of white wheals; and the evanescent character of the eruption. The papules of lichen urticatus are permanent, although their white or spasmodic stage is transient; and the tuberous elevations of erythema papulatum, tuberosum, and nodosum, are never white like the wheals of urticaria, while the eruption is more permanent.

---

[1] Edinburgh Monthly Journal.

[2] Lancet, vol. ii. 1846, p. 160.

CAUSE.—Gastric irritation is clearly established as an exciting cause of urticaria in the acute forms, and is not improbably a cause of its chronic forms. To gastric irritation as a cause of chronic urticaria may also be added irritation of any of the mucous membranes of the body, particularly that of the uterine system; and shock to the nervous system, as from affliction. As a predisposing cause, we have detected the presence of debility, generally of the assimilative and sometimes of the nervous kind. Not unfrequently urticaria is associated with rheumatism, and we have also seen it intermittent with neuralgia. Dr. Maclagan has suggested that the disease may arise from a want of proper transformation of the waste tissues of the body, and the detention in the blood of the elements of the organic salts of the urine. And he notes the relation subsisting between urticaria, rheumatism, and purpura.

The proximate cause of urticaria is an irritation of the nerves of the skin, giving rise to the peculiar prickling and tingling sensation, and exciting spasm of the muscular structure of the corium; hence the white buttons and wheals emptied of their blood by muscular contraction, and developed on a surface reddened by vascular congestion; hence, also, the gradual subsidence of the wheals, the recovery of the natural tint of the skin, and their sudden reproduction on the recurrence of slight irritation. In the instance of the rash occasioned by the sting of a nettle, the poisonous juices of the plant act directly on the nerves of the skin. In the case of urticaria excited by poisonous food, the action is an excito-sensory reflex operation, the seat of primary irritation being the nerves of the stomach; while in other examples of the disease the primary irritation may exist in any organ supplied with sympathetic nerves; in a word, urticaria is a neuropathic affection, as distinguished from erythema and roseola, which are homœopathic disorders. This view of the pathology of urticaria explains its association with other eruptions of homœopathic origin; indeed, it is matter for surprise, that a spasmodic state of the muscular structure of the skin so rarely accompanies its inflammation in other diseases.

In some persons the cutaneous susceptibility is so active that urticaria may be excited at any moment by merely scratching the skin, or by the mere pressure of a fold of the dress, or by the pressure of the bed or bedclothes. In a lady lately under our care we have watched the red streaks and blotches appear and creep along the skin and disappear, while we purposely engaged her in conversation on indifferent subjects. A word, a look, the slightest excitement, would immediately bring out a copious eruption. Urticaria occurs chiefly in the summer season, and is said to be more prevalent in cold climates, as that of Russia, than in those of the south. Persons who possess a thin and irritable skin, who are plethoric and of a sanguine temperament, are most liable to the disease, and for this reason it is more common in the female than in the male sex. It is also frequent in children, particularly during the period of dentition.

The alimentary substances which are capable of exciting urticaria act upon the system by means of the irritation which they cause to the mucous membrane of the alimentary canal. In some instances this irritation is referable to the natural susceptibility of the individual; while in others the probable cause is a poison generated by putrefactive decomposition. The substances which have been observed to give rise to these effects in different persons are very numerous; they are, some kinds of fish, as mussels, lobsters, crabs, prawns, shrimps, oysters, dried fish, &c.; certain meats, such as pork, goose, &c.; certain fruits and vegetables, as rice, oatmeal, almonds, strawberries, raspberries, cucumber, mushrooms, &c. Rayer mentions oatmeal gruel as occasionally producing this effect; and certain medicines, as valerian, copaiba, quinine &c., sometimes do the same. A member of our own family suffers, constantly, after taking rice milk. Dr. Gregory was affected by the disease after eating part of a cucumber; and he mentions two instances of persons attacked in a similar manner from drinking porter. Dr. Winterbottom was "twice violently affected by eating the sweet almond." Urticaria has been observed occasionally as a critical eruption, and has been stated by some authors to have occurred epidemically.

PROGNOSIS.—Urticaria is not a serious disease, and the premonitory symptoms of the febrile forms, although violent, and for the moment dangerous, are not difficult of relief. Chronic urticaria is very troublesome and obstinate, and indicative of an existing debility, associated with chronic functional disturbance. Urticaria subcutanea, from its connection with nervous irritability, and urticaria tuberosa, from its alliance with a broken-down state of the constitution, are necessarily of doubtful augury.

TREATMENT.—Febrile urticaria requires the exhibition of an efficient purgative at first, and the subsequent administration of effervescent salines, combined with ammonia and hydrocyanic acid. When the feverishness has subsided, and the secretions are natural, we may then have recourse to bitters, with the mineral acids; and chalybeates, either alone, or with quinine.

In urticaria ab ingestis it may be necessary to relieve the stomach of its load by means of an emetic; and we may select sulphate of zinc or ipecacuan wine as the most suitable. Bearing in mind the faintness and extreme prostration which sometimes accompany the nausea and sickness of this complaint, Willan cautions us against the use of tartarized antimony as likely to increase that kind of suffering; and Plumbe, with the same idea, suggests the administration of sulphuric ether in doses of twenty to forty minims every half hour until reaction is restored. At the present day he would probably have given the preference to chloric ether.

Chronic urticaria is to be treated by the restoration of the general health. In every instance some one or more functions are deranged, possibly unknown to the patient, and these nothing but an improvement in vital power and general vigor will set right. We have found of great service, the mineral acids with a bitter; cinchona with sulphuric acid; quinine with sulphuric acid, and quinine with iron; while very chronic cases will yield to nothing but arsenic.

Where any special indication presents itself, such as the gouty or rheumatic diathesis, we may call in the aid of colchicum, neuralgic complication, that of quinine.

The *local* treatment of urticaria consists in the employment o dies which are calculated to relieve the itching, tingling, and sn For this purpose we find sponging with hot water serviceable tion with the juniper-tar or carbolic acid soap; sponging w lotion of juniper-tar; frictions with the juniper-tar ointment; of a lotion of emulsion of bitter almonds with hydrocyanic lotion of bitter almonds, with spirits of wine and bichloride cury; a lotion of carbolic acid; sponging with hot vinegar, lotion of carbonate of ammonia; a lotion of aconite; and linin opodeldoc and chloroform or laudanum. When one applicati another must be tried, until the intended effect is produced. convenient of access, the tepid bath affords almost instantaneou

ROSEOLA.

Syn. *Exanthesis roseola*, Mason Good; *false measles; rose-rash; cutaneous blush;*

Roseola, or rose-rash (Plate VII.), so named from its dull c or roseate hue, is distinguished not only by the color of the escence, but also by the manner of its distribution, and by its ciation with congestion of the mucous membrane of the fauces, moderate amount of general fever.

The color of roseola varies in degree of brightness; occasio as in some of the local forms, it is quite vivid; in the general it is less bright, and is influenced by the clearness or muddin the skin; whilst in the form termed by Willan roseola autum the congested patches "are of a dark damask-rose hue." Assoc with this purplish tint of color of the rash is the tendency exhi by some of its forms to merge into purpura, and to leave behind at their decline a green and yellow stain, like that of a bruise.

The vascular congestion of roseola affects both the follicular the papillary plexus of the skin; in the former case giving rise punctiform efflorescence; in the latter to a blotch, resembling er ma in its pathological character. The *general* forms of the exant are for the most part punctiform, and distributed in small cluster corymbi (*roseola corymbosa*), like those of rubeola. This corym distribution of the rash is a point of some importance in distingu ing roseola from rubeola; the mechanical elements of the rash identical in the two affections, and the resemblance is often so ex as to render distinction, by the aid of the exanthem alone, a th impossible.

After the punctiform and corymbose distribution of the rash, most frequent form is that of a ring (*roseola annulata*), which so times springs from the circumference of a corymbus, and circles around; and sometimes begins as a circular patch, and fades in t centre while it spreads by the circumference. In the former case t rings are narrow and fine, and may constitute a general exanthe in the latter the rings are broad and local, being limited to some o region of the body, such as the lower extremities.

Under the name of *roseola punctata* we have described a third form, in which, not the corymbi but the separate puncta afford the most conspicuous character; the congested puncta in this case being sprinkled more or less thickly over the surface of the skin, and also constituting a general exanthem. Following the corymbose, the annulate, and the punctated varieties, comes a fourth form, pointed out by Willan, namely, a circular blotch, retaining permanently that figure, and remarkable for its deep roseate and almost purplish hue. To distinguish this form from the preceding, we have named it *roseola maculosa.*

Next in interest to the cutaneous exanthem is that which affects the mucous membrane of the fauces. This is a dull crimson blush; and coincident with the congestion of the fauces, there is commonly some degree of swelling and tenderness of the submaxillary glands, and often of the neighboring lymphatic glands. The participation of the mucous membrane, or internal skin, in the irritations of the external skin, is a pathological phenomenon that our physiological studies teach us to expect; and the chief point of importance deserving of note in the present instance, is the fact of a similar, but more grave congestion, occurring in rubeola, scarlatina, and variola; and we may also bear in mind that we have noted the same circumstance already, but in a less degree, in erythema papulosum, in urticaria, and in erysipelas.

The febrile symptoms of roseola are similar to those which accompany the exanthematous fevers generally, but much less in degree, and often so slight as to be hardly appreciable. They consist for the most part of nausea, headache, aching in the back and limbs, restlessness, languor and lassitude, chills succeeded by flushes, quick pulse, white tongue, thirst, sore throat, and arrested secretions of the skin, kidneys and bowels. And often, in conjunction with the febrile symptoms, there occur rheumatismal pains.

Moreover, it must not be omitted, in the general history of roseola, that there is no swelling or prominence of the skin, as happens in erythema, erysipelas, and urticaria; and that the affection, although often prevailing epidemically and endemically, is not contagious.

The VARIETIES of roseola may be divided into two groups, idiopathic and symptomatic; the former being independent or primitive in origin, the latter symptomatic of other forms of disease. In a tabular arrangement they may be grouped as follows:—

IDIOPATHIC.

Roseola corymbosa,
" annulata,
Roseola punctata,
" maculosa.

SYMPTOMATIC.

Roseola variolosa,
" vaccina,
" rheumatica,
Roseola arthritica,
" cholerica,
" febris continuæ.

rheumatic diathesis.
neuralgic complica
The *local* treatm
dies which are ca
For this purpose
tion with the
lotion of junip
of a lotion of
lotion of bit
cury; a loti
lotion of ca
opodeldoc
another
convenie

Syn. *E*

Ro
or r
esce
ciat
mo

as
it
t

the roseola infantilis and
a notha, of other writers:
n in childhood, may occur
er the influence of seasons,
we have thought it desirable
aracteristic and unalterable,
parison with the other forms

as the typical form of the
which, from its resemblance
at complaint and treated as
measles, or rubeola notha. It
m and corymbose or rubeoloid
ue, and distributed more or less
body: sometimes appearing on
mes both on the trunk and limbs.
eded by slight febrile symptoms
s as much as a week's continuance.
the evening or during the night.
aving bed in the morning, and lasts
subsiding on the fifth. It is crimson
s deeper-tinted, and assumes a dull
Its eruption is commonly attended
ing and tingling; but this symptom
pment it follows more or less closely
ppearing first on the face, next upon
and lastly on the limbs, but not un-
surface at once.
of the features of roseola as compared
color, in extent, in succession, in erup-
y also be mentioned that it is liable to
disappeared.
863–4, the exanthem was identical with
a more decided character; the corymbi
congestion of the fauces was greater;
the febrile symptoms were more acute:
of a rubeolous epidemic. Nevertheless,
er to consider it as a roseola or a mild
was curiously intermingled with varicella,
and sometimes with rheumatism.
ar 1864 was remarkable for depression of
: diseases in general assumed a low type.
not unfrequently among adults, there pre-
epidemic, generally distinguished by mild
consisting in a congestion of the fauces.

skin; roseola is well shown in Plate XXIV. P, which
roseola.

enlargement of the salivary and lymphatic glands of the face, and an exanthem on the skin, which one while put on the appearance of roseola, another while of rubeola, and sometimes of varicella. It is curious to note, that the same persons in some instances experienced the several forms of the exanthem in succession. The epidemic was first brought under the attention of the profession by the Epidemiological Society, and the president of that society, Dr. Babington, gave the name of "rubeola notha," or spurious rubeola, to one of the forms. When a deposit of lymph was formed on the fauces, the case was regarded as a mild form of diphtheria. The following cases illustrative of the epidemic in question, may serve as a record of its leading features:—

CASE 1.—A young gentleman, twelve years and a half old, was, to use his mother's phrase, "born with red gum," and a few weeks after birth became the subject of eczema infantile. He has now been free from eczema for many years, and has grown to be a fine, manly boy.

On Wednesday, the 27th of April, he had enjoyed a game of cricket, and had possibly somewhat over-exerted himself. On Thursday, the 28th, he awoke with an eruption of papular varicella; and was brought to us for advice. He said that his skin had itched a good deal during the night, and that he had scratched himself, but that his sleep had not been disturbed, and that he felt as well as usual. His tongue was perfectly clean, there was a slight suffusion of the fauces, but no feeling of soreness of throat, no thirst, and no weariness of limbs. On Friday the papulæ had become more prominent; they were isolated, without surrounding redness, and dispersed; some few became vesicular at the summit, and one or two on the face were slightly pustular. On Saturday, the third day, the eruption was at its height, and remained prominent on Sunday, the fourth day; still there were no constitutional symptoms; he looked a little paler than usual, but nothing more, and declared that he had no uneasy symptom; his appetite remaining good all the time. On Monday, the fifth day, the eruption subsided rapidly; and on Tuesday, the sixth day, he was considered to be quite well.

Our little friend continued well until Saturday, the 14th of May; for the two or three days preceding this date, his mother thought that he looked pale, and was dark under the eyes. On Thursday he had received a blow from a cricket-bat on the knee, which gave him pain; but the next morning, after being well bathed with a spirit lotion, the knee was well, and he went to school as usual on Friday and Saturday. At midday on Saturday, his mother observed that his face and eyelids were red, and the face a little swollen in the region of the submaxillary glands, more particularly on the right side. The fauces were somewhat reddened, but he had no soreness on swallowing; several of the lymphatic glands about the face were also a little enlarged and tender, more particularly one situated on the parotid gland just in front of the ear on the left side, and another situated under the chin on the mylo-hyoid muscles. Nevertheless, his tongue was clean, the secretions natural, he had no thirst, and no feelings of lassitude or illness.

On Sunday, the second day of the attack, he was brought to us, and was then covered with a papular rash which extended from his face down to his wrists and ankles, but was most marked and most abundant on the front of the trunk. The papules were minute, the papules in fact, of rubeola; not the larger, conical, dispersed papulæ of the previous varicellar attack. They were disseminated somewhat closely, and each papule looked as if it represented the small corymbus of rubeola, the rest of the corymbus being imperfect or absent. There could be as little question as to its appertaining to rubeola as there was in the previous eruption of its being a varicella. The color of the papules was of the proper rubeolous hue; and the prominence of the papule on the one hand, and the absence of imperfect development of the erythematous corymbus on the other, distinguished it from simple roseola. Moreover, it must be mentioned, that dispersed among the papules were the foveolated traces of the varicella of the previous eruption.

With this papular, rubeolous eruption, there was a slight suffusion of the conjunctiva, a little stiffness of the eyelids, and a slight redness of the tonsils, but no soreness of the throat in swallowing; the tonsil of the left side was depressed in the centre and covered by a thin whitish film; but puffed and red around the circumference; and, at the upper part, inclined to bleed. There were still some enlargement and a little tenderness of the submaxillary glands, and also of the preauricular and submental lymphatic glands. There had been in the morning a little sneezing, and some running at the nose, but there was no coryza; no orbital or ocular pains; the tongue was clean and moist; there was no thirst; and there were no signs of constitutional irritation.

It must further be mentioned that he had had rubeola in infancy; and scarlatina somewhat severely; while on his arm was exhibited the proper foveolated cicatrix of vaccinia.

On Monday, the third day of the attack, the eruption subsided rapidly; and on the fourth day was quite gone, together with the swelling of the glands. On this day his mother considered him as being quite well, he had regained his spirits, his appetite, and his strength.

This young patient may be regarded as an example, not by any means rare, of a dermatopathic diathesis; he was born with strophulus; next suffered from eczema; had rubeola and scarlatina; next varicella; then roseola corymbosa or rubeola notha; and the following summer, the severest attack of lichen urticatus we have ever seen; the eruption covering the whole of the trunk of the body and limbs.

CASE 2.—A young man, aged twenty-three, a medical assistant, of delicate frame, had variola in October, 1863, having been properly vaccinated as a child. The eruption came out abundantly, particularly on the face, and left him much exhausted in strength. He remained debilitated during the winter and spring, and towards the end of May, the symptoms which ushered in the variola appeared to return.

He was under the impression, from the similarity of the symptoms, that he was about to have a repetition of variola; he felt great weariness, with pain in the loins, giddiness, and feverishness. These symptoms had been preceded, for about a week, by the special symptoms of rubeola notha, namely, soreness and congestion of fauces, tenderness and enlargement of the salivary glands and of the lymphatic glands of the head and face, sneezing, and coryza; to which were added, swelling of the lymphatic glands of the arms, and slight diarrhœa. A few days after the commencement of the more severe symptoms, a rubeolous exanthem showed itself on the skin, extending from his head to the lower part of the trunk, but not intruding upon the legs. On the face and chest the exanthem was papular, but, lower down, gave rise to no elevation of the surface. The more severe constitutional symptoms subsided on the appearance of the rash; but the congestion of fauces, tenderness of salivary glands and diarrhœa, have lasted for six weeks with little abatement. The exanthem has also continued for this long period, but is less vivid than at first, and the papules have subsided.

CASE 3.—A young lady's maid, nineteen years of age, complained of headache and weariness, with soreness in the submaxillary region, on Sunday, June 26; the symptoms were not sufficiently severe to prevent her from pursuing her usual duties until Thursday, when the pain in the head had increased in severity, and her face looked swollen and flushed. It was on this day that we were called to see her; her tongue was moist, as was her skin; her pulse was soft and weak; her bowels free; there was no fever, but considerable weariness and lassitude. The face was covered with red blotches, and in the centre of each blotch was a papule, suggesting incipient variola; while the trunk and upper limbs were mottled with a rubeolous rash which did not reach down to the lower limbs.

We ordered her a drachm of sulphate of magnesia, with one grain of quinine and seven minims of diluted sulphuric acid in solution in one ounce and a half of compound infusion of roses, twice in the day; with repose in bed. On Saturday the rash had nearly disappeared, and on the following day the patient was convalescent.

The characters of this protean epidemic are well exhibited in the preceding cases; and we are led to infer from their consideration, that the varicella, the rubeola, and the roseola, were simply varieties of manifestation of the same "causa morbi." That the disease is not always so mild as is here depicted is, however, shown by the following quotation from the Registrar-General's Report:—

"The total number of deaths in London in the week that ended Saturday, June 18, 1864, was 1296. The average number for the twenty-fourth week in ten years, 1854–63, is, with a correction for increase of population, 1173. The excess in the present return above the estimated number is considerable; it amounts to 123.

"Measles continues to be the most prevalent in the epidemic class of diseases. It was fatal in the week in 85 cases. In the second week of May there were 50 deaths from it; in the following week

they rose to 87, and since that time the weekly mortality has bee
nearly the same amount."

Roseola annulata (Plate VII. F) sometimes makes its ap
ance as a corymbose exanthem, and the patches throw off small li
rings, or it begins from the beginning as an annular rash, and fol
the course of roseola corymbosa, both in the development of its
rescence and in general symptoms. In the latter case the rings a
first one or two lines in diameter, and increase to the dimensio
half an inch. Sometimes this form of roseola exists as a ch
affection. We had lately under treatment a delicate woman,
twenty-one, who had been the subject of this exanthem inte
tingly for several weeks. She was pale and anæmic, her powe
digestion were weak, and she suffered under assimilative debility
great depression of spirits.

There is, however, another form of roseola annulata[1] which
monly attacks the lower limbs: it begins in the form of cir
blotches of about a quarter or half an inch in diameter, and sp
by the circumference, while the centre fades and forms an area
rounded by a broad ring. These rings attain a breadth of one o
inches, are of a bright crimson at first, and as they disappear, fad
into a greenish-yellow bruise-like tint. The constitutional symp
are the same as those of common roseola, and the course of the
exanthem a week or ten days. We have seen this form only
times, and then in children under puberty.

The following case of roseola annulata has a double intere
consequence of forming part of the exanthematous epidemic of 1
A young gentleman, aged ten, tempted by a warm day in the m
of April, and regardless of an easterly wind, abandoned his w
coat, and took a long country walk. He returned home much he
and the next morning awoke with sore-throat and some enlarge
of the submaxillary glands. The attack was thought to be an
nary cold, and he continued for a week feeling a little unwell.

At the beginning of the second week, the soreness of throat ha
terminated, a blotchy eruption appeared on the face, and was f
to occupy the whole surface of the skin. It had a dull crimso
hue, appeared at first as a blotch of the size of a sixpence mo
with dull red and white, not elevated, and without pruritus; an
the course of a day threw off from its circumference a well-de
narrow ring, which encircled the mottled blotch, and increased t
size of a shilling, and in some instances of a two-shilling
Moreover, the whole skin had a dusky or dirty hue, so freque
some forms of cachexia.

The roseolous exanthem having persisted for five days, sudd
declined; and was followed by rheumatic pains in the joints o
limbs, particularly in the ankles, knees, and hips. The rheu
pains lasted for three days, and then subsided, leaving him free
from exanthem and rheumatism.

---

[1] Portraits of diseases of the skin, Plate II. A K, exhibits a good example o
ola annulata.

The third week was one of respite both from the eruption and the rheumatism; but with the beginning of the fourth week both returned in a slighter degree than at first, and continued for four days; they then disappeared for another period of four days; but at the end of this interval the exanthem burst forth afresh, and more abundantly than before; but without the rheumatic pains. Such was the state of the skin at the conclusion of the fifth week of the disorder, the fourth of the eruption.

With the exception of the first week his appetite had been good throughout the attack; his tongue was clean, and rather pale; he perspired a good deal at night; his urine was somewhat high colored, and his bowels a little confined. He had had no shivering; no feverishness; no redness of conjunctiva or coryza; no sneezing or running at the nose; and only a moderate amount of congestion of the fauces with the sore-throat, during the first week.

His medical adviser had given him quinine; and this was supposed to have arrested the exanthem at its first appearance, but ceased to control it afterwards.

We prescribed for him a mild aperient pill, with nitromuriatic acid and tincture of orange-peel; the exanthem quickly subsided, and at the end of three days had entirely disappeared. The whole period of duration of the last attack of the exanthem was, consequently, nine days.

If, now, we assemble the symptoms presented by this case in their order of occurrence, we shall have a fair word-picture of roseola: for example, the slight sore-throat, enlarged and tender salivary glands, rheumatic pains in the joints, muddy skin, dull crimson blotches, mottled, without elevation, and dispersing at the circumference into narrow, well-defined rings; their appearance on the whole surface of the skin at once; and especially their sudden recurrence after disappearing. Then the negative symptoms as compared with rubeola; no suffusion of conjunctiva, no coryza, no running from the nose, no sneezing, no cough, no fever. Next, the absence of rheumatic pains in rubeola; but the presence of a well-defined, papulated, clustered exanthem, distinguishable, although imperfectly defined, even in rubeola notha; and the succession of the eruption, coming out first on the upper part of the body, then descending to the lower half, and appearing lastly upon the legs.

ROSEOLA PUNCTATA is a rare form of the exanthem, of which the following are the characters: Febrile symptoms of a subacute type accompanied with redness of the eyes, slight coryza, redness of the fauces, and swelling of the mucous membrane of the mouth, ushering in an exanthema at the end of three days; the exanthema appearing on the mucous membrane and skin; on the latter, in the form of small red spots occupying the mouths of the follicles, then becoming diffused so as to cover the greater part of the body, reaching its height on the third day; at first, of a bright raspberry-red color, afterwards acquiring a dull roseate hue, the dulness increasing with the progress of decline; *the primary red spots resembling dull red stains* as decline advances, and fading by degrees after the disappearance of the rash; the entire attack lasting ten days, of which three belong to the febrile period, three to the exanthema, and four to its decline, the dark stains being perceptible for some days afterwards; the rash assuming a difference of form on different parts of the surface, such differences being all referable to roseola.

The following is an example of this form of exanthema. For the opportunity of observing it, we are indebted to Mr. Marson, the resident-surgeon of the Smallpox Hospital, who, during a connection of twelve years with that hospital, has seen about ten similar cases:—

A young man, aged twenty-four, of good constitution, engaged as light porter in a draper's house in Oxford Street, exposed himself to cold by riding on the outside of an omnibus during the prevalence of cold winds. At the end of his journey he felt chilled, and, in the course of the same evening, experienced headache, pain in the limbs, and sensations of general illness.

Sept. 8th.—On the following morning, after a restless night, he arose fatigued; his headache had increased, his appetite was gone, and he performed his duties painfully and wearily. He was chilly during the day, and in the evening feverish; had a dry mouth, and retired early to bed.

9th.—He had still greater difficulty in getting through his work to-day than yesterday. His symptoms were the same, but increased in severity. At night, after getting to bed he smoked a cigar and took a basin of gruel, and being well covered up, broke out in a profuse perspiration.

10th.—This day he scarcely felt able to rise from his bed; but succeeded in getting down stairs and cleaning some knives. While engaged in that occupation he observed an eruption of small red spots on his arms, and soon afterwards returned to his bed. On taking off his clothes he found his whole body covered with spots, the upper parts being most, and the lower least, affected. He remarked, also, that his eyes looked red, that his lips were swollen, and that there were red spots likewise inside his mouth.

11th.—Having been seen this day by a medical man, he was sent to the Smallpox Hospital, under the impression that the eruption was incipient smallpox. At this time the eruption consisted of small red spots, the centre of each spot being very slightly raised, and corresponding with the aperture of a cutaneous follicle.

12th.—The redness of the eyes, accompanied with coryza in a slight degree, the swelling of the lips, and the spotted state of the mucous membrane of the mouth, were at their height to-day, and to these symptoms was superadded a cough, making the general symptoms very similar to those of rubeola. The red spots had now become confluent, and assumed the character of patches, which covered the greater part of the body. The congested skin was slightly raised above the level of the unaffected parts, and the color presented the raspberry hue of measles.

13th.—The patient's eyes were still somewhat congested, his lips swollen and dry, the mucous membrane of the mouth was thickly covered with red spots, the fauces were red, his tongue was coated with a white, moist deposit, which was beginning to separate in flakes, leaving the surface beneath quite smooth, and he uttered occasionally a short, mucous cough.

The efflorescence had a decidedly rubeolous hue, but offered some variety of appearance on different parts of the body. On his face, which was somewhat swollen, the patches of redness were irregular in figure, and diffused.

On the trunk of the body, and particularly on the abdomen, the efflorescence presented the ordinary rubeolous appearance of common roseola.

On the arms and legs the red patches had run together, so as to cover the greater part of the skin, and form a dull, red ground, which was studded all over with spots of a dark red color. These spots, which we have assumed as the specific character of the eruption, were the original red points by which the efflorescence commenced. They presented a deeper red than the rest of the surface, were about two lines and a-half in diameter, and were dark and slightly raised in the centre. The redness was partly the effect of congestion, and partly of transudation of the coloring principle of the blood; and in some few situations, as around the ankles, and upon the back of the shoulders, where the weight of the body rested, there was a decided ecchymosis from the latter cause. It was obvious that these red points represented the follicles of the skin, in which the inflammation commenced, and the elevated centre was the pore raised above its natural level, as a joint effect of the congestion of the capillary vessels, and effusion into the meshes of the vascular network.

On the neck the efflorescence appeared in the form of patches distinctly circumscribed, slightly elevated, more or less circular in figure, and of an average size of half an inch in diameter. On careful examination, these patches were seen to be formed by the confluence of a number of small circular congested spots, each taking its rise around the aperture of a follicle, and many of these separate spots, of about a line in diameter, were sprinkled in the interspaces of the patches. In several of the larger patches there were one or more yellowish spots, which, at first sight, gave the idea of the elevations of urticaria, but which the changes succeeding on the following day proved to be faded points indicating the decline of congestion. The increase of these pale spots gradually converted the patches into rings, and the latter finally disappeared. We must remark, that the spots above referred to were quite distinct from the deeper-colored and star-like spots on the arms, which suggested the specific name, "punctata," which we have given to the disease.

14th.—The eruption is now on the decline. The efflorescence is of a duller hue; the spots have more the character of stains than yesterday, and the patches on the neck are converted into rings; on the abdomen, chest, and thighs, the efflorescence is fading away, like ordinary roseola. The thin skin of the penis has a remarkable appearance, from being covered with deep rose-red stains.

On Friday, and the two following days, the general symptoms improved, while the efflorescence continued to fade, and on Monday he was sufficiently well to be re-vaccinated, and to leave the hospital.

Roseola maculosa (Plate VII. F).—The roseola autumnalis of Willan, occurs in the form of circular patches of about the size of a shilling, and of a "dark damask-rose hue," seeming at a distance "as if stained by the juice of black cherries or mulberries." The constitutional symptoms are very mild, and the eruption subsides in a week or ten days, leaving behind it a slight furfuraceous desquamation. This form of roseola is chiefly met with in children, and principally upon the arms and legs. Occasionally it may take on the annular mode of extension mentioned above; in which case it would constitute a roseola annulata, with broad margin.

ROSEOLA SYMPTOMATICA.

Roseola variolosa is a blotchy redness of the skin, of roseolous hue, which sometimes accompanies the eruptive stage of variola. When inoculation for smallpox was practised, the rash was not unfrequent, occurring once in every fifteen cases; at present it is rare. It follows the usual order of eruption of the exanthemata, beginning on the face, chest, and arms; then descending to the trunk, and afterwards to the lower extremities. It is regarded as a not unfavorable sign when the rash is of bright color, but less favorable when dark in its hues, and the eruptive fever runs high. It commonly makes its appearance on the second day of the constitutional symptoms, the ninth or tenth after inoculation, and has a course of three or four days.

Roseola vaccina is an exanthem similar to the preceding, which accompanies sometimes the development of the vaccine vesicle, appearing at the ninth or tenth day after vaccination. The rash begins in the neighborhood of the vaccinated spot, and spreads upon the arm and trunk, and sometimes over the greater part of the body. Its course is rarely longer than two days, but it is attended with some feverishness.

Roseola rheumatica et arthritica.—Rheumatism and gout are both occasionally accompanied with a roseolous rash, appearing in the form of a circular blotch (*roseola maculosa*), and usually on the lower extremities. Sometimes the roseola precedes the attack, and sometimes makes its invasion during the progress of the principal disorder.

Roseola cholerica has been described by Rayer as a roseolous exanthem accompanying the progress of the Asiatic cholera. It sometimes resembled scarlatina, sometimes measles, and sometimes urticaria; was associated with congestion of the fauces and the usual train of febrile symptoms; and was brightly tinted at first, but subsequently acquired a dirty pink or rose-color.

Roseola febris continuæ is the punctated exanthem which so commonly accompanies continued fever, and is met with in all the three varieties, typhus, typhoid, and relapsing fever. It makes its appearance at the beginning of the second week, and is scattered sometimes over the entire body, sometimes on the trunk alone, and sometimes on the limbs, particularly the back of the hands, but rarely on the face. In typhoid fever the exanthem has a bright rose-color,

appears on pressure with the finger and after death. In typhus
lberry-colored: it continues on pressure with the finger, and
s after death, when it presents the appearance of petechial spots.
anthem of relapsing fever also acquires very quickly a dark
nd passes into the state of petechiæ. Each spot has a course
e days, and fresh spots appear every day; so that after the first
lays they may be seen in all their stages—crescent, mature,
ling.

er the very objectionable name of *roseola miliaris*, Bateman
iced the occurrence of miliary vesicles or sudamina in conjunc-
th the roseolous spots of continued fever. These vesicles are
equent in relapsing fever; but they appear in all the three
and most abundantly during the prevalence of copious perspira-
They are met with chiefly on the neck and breast, in the arm-
d on the sides of the chest.

NOSIS.—Color, figure, and febrile symptoms, are the three
; signs by which roseola is to be distinguished from other
ous affections; the pink or bright crimson tint deepening into
e of the damask rose, and fading often into the shades of a
; the punctiform, closely-set dots grouped in cluster; the rings,
nly narrow and fine, but sometimes broad; the puncta, and the
s; the congested fauces; and then the fever sometimes slight
hemeral, and sometimes severe. But even with all these
ms before us, it is often difficult to decide between a case of
and one of mild rubeola, and we are constrained to call other
es to our aid. If there exist an epidemic of rubeola, if the
be affected for the first time; moreover, if there be coryza
catarrhal cough, the case is undoubtedly rubeola. In roseola
s rarely any coryza, and still more rarely catarrh.

sE.—The cause of roseola is debility which may be nutritive,
s, or assimilative. The exciting cause is probably change of
r or seasons; alternations of heat and cold; fatigue; and errors
. Hence we find it occurring very commonly in the spring and
, in the summer, and sometimes prevailing in an epidemic or
c form.

uced power of the system, and a relaxed and weakened state
kin, are conditions favorable to the development of roseola;
probably its association with diseases of debility, such as
tism, gout, fever: and hence also the tendency of the exan-
o pass in the condition of purpura.

NOSIS.—Roseola is by no means a serious affection, either in
pathic form, or as a complication of more serious maladies. In
ic shape it indicates a general state of disorder of the economy.
we must endeavor to correct.

TMENT.—Gentle laxatives, effervescent salines, light bitters
e mineral acids, small doses of quinine with sulphuric acid.
alybeates, constitute the pharmacopœia of roseola, both in its
hic and in its chronic form. If special indications be present.
obstructed dentition, fever, rheumatism, gout, diarrhœa, or

any other form of complication, the symptoms of these affections must be met by their appropriate remedies. Locally, it is better left alone; but if much irritation be present, the skin may be washed with the juniper-tar or carbolic acid soap and tepid water, or sponged with hot water, or with a tepid ammonia lotion, one drachm of the carbonate to half a pint of water, or with a lotion of hydrocyanic acid in emulsion of bitter almonds. Where any fear of repercussion of the exanthem prevails, the benzoated ointment of oxide of zinc may be rubbed upon the skin with gentle friction.

The diet should be of the antiphlogistic kind: namely, toast-water and barley-water, with or without chlorate of potash or lemon juice, for drinks; with milk diet, farinaceous puddings, broths, eggs, fish, poultry; returning by degrees to the ordinary diet of health.

CHAPTER VII.

BULLOUS AFFECTIONS.

BULLÆ is the type of one of Willan's orders, and presents an unmistakable character. His definition of bulla or bleb, is, "a large portion of the cuticle detached from the skin by the interposition of a transparent watery fluid." This definition applies very exactly to one of the members of the present group, namely, to pemphigus; but less well to herpes, which Willan treated as a vesicle, and admitted into the same order with eczema; and still less to miliaria, which is truly a vesicle. Herpes is a large vesicle, or small bulla; and although differing entirely in its nature both from vesicular affections and from pemphigus, seems entitled from the possession of this special pathological form, to a place, for the present at least, in the bullous group; and the more so, as some of the varieties of herpes are really allied more closely to pemphigus than they are to herpes. And as we have broken up the order Vesiculæ, by the dispersion of its different members, this is also the proper place for the consideration of the smal bleb or vesicle of miliaria.

The diseases constituting this group are three in number; namel

Herpes, Miliaria, Pemphigus.

HERPES is derived from the word ἕρπειν, "*quod est*," says Actuariu "*serpere per summam cutem*;" but this is clearly an error as applied t the typical form of herpes, herpes zoster; for herpes does not cree although some of its chronic varieties, which belong rather to pemphigus than to herpes, namely, herpes circinatus and herpes iris, reall do so. The term ἕρπης was applied by the ancients to a creeping an eating form of eruption, sometimes vesicular and sometimes ulcerative and appertaining to the strumous, the syphilitic, and the cancerou affections.

Pemphigus is derived from πεμφιξ, *bulla*, a water-bubble, and is used synonymously with pompholyx, an air-bubble; πομφολυγες being "the bubbles of air which appear upon water;" and πομφοι, according to Galen, "eminences of the cuticle containing a fluid." Another term was applied by the ancient Greek writers in this affection, namely, φλυκταινα, latinized into phlyctenæ, from φλυειν, to bubble or boil up, or over; hence the name of one of the varieties of herpes, videlicet, herpes phlyctenodes.

The general signification, therefore, of these terms, as applied to the diseases contained in this group, is: herpes, an eruption of bullulæ or small bullæ; miliaria, an eruption of large vesicles; and pemphigus, an eruption of large and undoubted bullæ.

HERPES.

Syn. *Ecphlysis herpes*, Mason Good; *Olophlyctis*, Alibert.

Herpes (Plate IX.) is an inflammation of the skin, occurring in patches of a more or less circular figure; upon these patches are developed a crop of vesicles, which gradually rise up from the inflamed ground, and attain a semi-globular figure. The vesicles begin to appear on the second day of the inflammation; they are at first transparent, and reach their full size, that of a small pea, in one or two days; on the second or third day, they are opalescent; sometimes of a grape-yellow color, sometimes purplish and wrinkled. On the third or fourth day, they shrink still further, and produce a reddish-yellow wrinkled scab. On the fourth, fifth, and sixth days, the scab becomes dark-colored and hard, and has the appearance of being imbedded in the skin; and on the three following days the scabs fall, and leave behind them purplish pits.

This is the history of an individual patch, and of an individual crop of vesicles; but as the patches come out in succession for two or three days, the eruption is generally prolonged until the tenth or twelfth day. The patches are commonly oblong in figure, the long diameter of the patch corresponding with the course of the cutaneous nerves of the region on which they are developed; and they vary in size from half an inch to two inches in diameter. They are brightly red, very slightly swollen, and the number of bullulæ varies from three or four to twenty or more. Generally, the vesicles are separate and discrete, but sometimes confluent; in which case, several may run together, and constitute a bullula of irregular form. The yellow tinge in the vesicles seen at the beginning of their decline, is probably due to the conversion of the cells of the rete mucosum into pus; and their purple hues to the admixture of blood with the original lymph, the effusion of blood being due to pressure or friction against the patches.

Sometimes, and particularly in elderly persons, the eruption does not finish so simply, but terminates in deep and painful ulcers, which may last for a considerable time. The ulcers are occasioned by undue pressure or friction of the eruption, in a state of skin lowered in vitality by age, or by a cachectic condition of the constitution. The scabs which form upon the ulcerated spots are very adherent, and when they are removed, leave deep pits of a purple hue, like those of smallpox; and permanent cicatrices.

It follows from this description that herpes is not simply an eruption of large vesicles or bullulæ; it is, besides that, an inflammation, having a given course, and running that course in a given time; in other words, it is a specific affection, obeying special laws of its own, and differing from the ordinary physiological laws of the economy. But there is another phenomenon of considerable importance in connection with herpes, namely, an affection of the nerves of the part, a neuralgic affection. Herpes is essentially an inflammation of nervous origin; the first irritation is that of a nerve; the inflammation and its vesicular development are the consequences. Herpes is therefore accompanied with severe nervous pains, but not always, and not in the majority of cases, and therefore a difficulty arises in regarding it as a pure nervous affection.

The pain of herpes is of two kinds, one being constant, the other occasional; the constant pain is local in its situation, the occasional pain is that of a nerve, commonly a single nerve, and sometimes of all the nerves of the affected region. The neuralgic pain sometimes precedes the eruption, and ceases as soon as the cutaneous inflammation begins; sometimes it accompanies or follows the eruption; and sometimes continuês for weeks, months, or even years, after all eruption has ceased; and the patches commonly travel in the direction of the branches of a nerve. For example, herpes zoster, the true *cingula* or shingles, takes the course of an intercostal nerve; the first patch is probably developed near the middle line on the front of the body, at the spot where the anterior cutaneous nerves are distributed in the skin; the second patch will possibly occur upon the seat of distribution of the posterior cutaneous nerves, and the third patch over the lateral cutaneous nerves; other patches taking up intermediate positions upon the same line; while in a partial form of the eruption, a single patch only, or two patches may be present, namely, the anterior, or the posterior, or both, without any intermediate patches to form a link.

The local pain of herpes is one of intense burning; hence its ancient titles *ignis sacer*, *ignis sancti Anthonii*, associated with tingling, prickling as with hot needles piercing from within, and itching; and this pain continues throughout the whole course of the eruption. It is not contagious.

The VARIETIES of herpes may be considered as constituting two groups—a *neurotic group*, corresponding with the typical form of the affection just described, at the head of which stands herpes zoster; and a *phlyctenoid group*, represented by herpes phlyctenodes. They are as follows:—

ACUTE.

Herpes zoster,
" phlyctenodes,
" labialis,
" preputialis,

Herpes palpebralis,
" nasalis,
" auricularis,
" pudendalis.

CHRONIC.

Herpes circinatus,
" iris.

ACUTE FORMS OF HERPES.

HERPES ZOSTER,[1] or SHINGLES (Plate IX. A F), is remarkable from its embracing one-half the trunk of the body;[2] in other words, taking the course of the anterior branches of the spinal nerves. It is commonly met with in association with an intercostal nerve, sometimes with a cervical, a brachial, or a crural nerve. Its usual position is around one-half the waist; and as it has never been known to attack the two sides of the trunk at the same time, the popular notion, referred to by Pliny, has arisen, that were it to do so the result would be fatal.[3] From half-encircling the waist, it has been termed *zona* or girdle, and again *cingula*, from which latter term its popular name *shingles* is derived. Besides the waist, we have seen it on the flank, on the hip, on the thigh, on the shoulder, on the neck, and upon the head. On the head and face it occupied chiefly the occiput, the temple, and the forehead, while one vesicle was developed on the conjunctiva. On the limbs it takes the course of the cutaneous nerves, as of the shoulder and thigh. Bateman terms a case of the latter kind *herpes proserpens*.

Usually the eruption of zoster appears without any premonitory sign, and runs through its course without much suffering, with no other pain, in fact, than the burning and tingling which constantly accompany it, and which have gained for it the name of *zona ignea;* at other times, when the neuralgic affection is severe, the internal organs are apt to suffer also, from the communication of their nerves with the intercostal nerves; thus, there may be intense shooting pains through the chest, with tumultuous action and palpitations of the heart. And sometimes the eruption is accompanied with febrile symptoms, which are as likely to arise from the ordinary cause of the eruption, namely, a chill, as they are from the nervous perturbation accompanying the disease.

On the subsidence of the eruption, the neuralgic pains, of a very severe kind, are apt to be continued for some weeks, and to resist every kind of treatment. It has been stated that the eruption attacks one side of the body more frequently than the other. This is not the case; the two sides are equally the subject of the affection. Its seat of eruption is commonly determined by the direction in which the cold, which causes it, is applied, and sometimes by a temporary or permanent debility of the part. We lately saw a case which had arisen from a chill in bathing, and an inordinately long walk which had strained the muscles of the hip: the eruption broke out on the weakened part.

---

[1] Syn. *Zona; zoster; zona ignea; ignis sacer; ignis sancti Anthonii; cingulum; shingles; der gürtelausschlag, feuergürtel*, Germ.

[2] See Portraits of diseases of the skin, Plate V. A Y. In this figure, besides the zona around the trunk of the body, a large patch of herpes phlyctenodes is seen on the flank, just above the hip.

[3] "Zoster appellatur, et enecat, si cinxerit."—*Pliny.*

Herpes zoster enjoys no immunity from the variations that accompany most other natural phenomena, and especially those of disease. This affection may be said to have three principal symptoms, namely, inflammation of skin, eruption of vesicles, and neuralgic pains. We have now to state that one or other of these symptoms may be occasionally absent; for example, there may be inflammation and pain without vesication; or there may be inflammation and vesication with a scarcely appreciable amount of pain. And in a fully-developed zoster some of the patches may be studded profusely with vesicles, while on others they are scanty or absent. In these cases we signify our meaning by the use of the term "arrest of development."

HERPES PHLYCTENODES[1] (Plate IX. B) differs from herpes zoster only in situation, being identical in every other respect. Thus, when herpes attacks the trunk of the body and forms a demizone around it, the case is one of herpes zoster; but when, as we have already described, it appears upon a limb, upon the neck, or upon the head and face, it no longer forms a demizone, and then it is more correct to term it herpes phlyctenodes.

Herpes phlyctenodes may occur as a single patch, or as a cluster of several, on any part of the body. The patch rarely exceeds in size the palm of the hand, and consists of an inflamed surface studded over with vesicles, sometimes discrete and sometimes confluent; occasionally the vesicles are so small as to have suggested the term *herpes miliaris*; more frequently they attain the size of peas of moderate dimensions.

The patches commence with a sensation of burning, tingling, and smarting; some red puncta are seen on the painful spot, a blotch of redness succeeds, and on the inflamed surface the vesicles are developed. Sometimes there is a deep-seated soreness and pain as well as that already described. It is rare for any constitutional symptoms to be present.

The following is an illustration of the common cause and progress of herpes. A boy, fifteen years of age, sat for some time on the grass, on Good Friday, April 10, 1846. The next day he had severe pain over the whole of the front part of the right thigh, which was attributed to rheumatism. On the evening of Saturday a blush of redness, in patches, was apparent on the surface. On Sunday, minute vesicles in clusters were perceived here and there upon the red patches. These vesicles soon became distended with a transparent and colorless fluid, and reached their full size, looking, towards evening, like so many pearls. On Monday some of the vesicles were already becoming shrivelled, and had a purplish hue, while others, fully distended, possessed a rich grape-yellow tint. On Tuesday all the vesicles were on the decline, with the exception of a few tardy clusters, which were now attaining maturity. On Wednesday, the fourth day of the eruption, the greater part of the vesicles had dried up into reddish-yellow wrinkled scabs. On succeeding days the scabs became gradually darker and harder, and were closely imbedded in the skin. By Saturday a few only of these scabs remained; and on Sunday, the completion of the week, traces only of the existence of the eruption remained.

---

[1] Syn. *Herpes miliaris; olophlyctis miliaris*, Alibert; *nirles*.

HERPES LABIALIS[1] represents the local varieties of herpes, all of which, like herpes zoster and herpes phlyctenodes, are acute forms of the affection, and have their regular course, never exceeding ten or twelve days. Some occur only once, or if the attack be repeated, it is accidental, and occurs at an uncertain period; while one of the local forms, herpes preputialis, is intermittent, and breaks out at short intervals for a considerable period of time.

Herpes labialis, a frequent consequence of an inflammatory cold, or of slight febrile disturbance of the system, begins with itching, redness, heat, swelling, and painful tension of the lip and adjacent mucous membrane. On the day following the beginning of the inflammation, five or six small vesicles appear on the affected spot; some of the vesicles congregate and form small cellular bullæ of the size of a split pea. On the third or fourth day the lymph of the vesicles becomes turbid and lactescent, and subsequently semipurulent. On the fifth or sixth day the vesicles desiccate into a brownish crust, and on the eighth or tenth day the crust falls. When the crust is meddled with during its progress, or the inflammation is aggravated by interference, a hard scab is formed, which remains adherent for a longer period than the natural crust.

HERPES PALPEBRALIS, NASALIS, ET AURICULARIS, are identical with herpes labialis, but usually less extensive and less severe. In herpes palpebralis the inflammation and vesicles are developed on one eyelid; in herpes nasalis along the margin and upon the ala of one nostril; and in herpes auricularis upon the lobe of one of the ears and not on the other. In symptoms, course, and termination, these forms correspond with herpes labialis.

HERPES PREPUTIALIS may occur upon the mucous or upon the cutaneous surface of the prepuce: it consists, as do the other local forms, of a blotch of redness surmounted by a small crop of vesicles, and attended with a sensation of smarting and burning; on the prepuce the blotch is rarely larger than half an inch in diameter; the vesicles found on the cutaneous surface subside after a few days, from the absorption of their fluid contents, and dry up into small thin brownish scabs; but the vesicles on the mucous surface are generally broken, and produce minute excoriations, which are often slow in healing, and are liable to be mistaken for syphilitic ulcerations.

Herpes preputialis presents the peculiarity of being intermittent, returning from time to time for several months or even years. It rarely occurs without a foregone irritation of the organ, either in the shape of a gonorrhœa or chancre; and then seems to perpetuate a remembrance of the original disorder. We know a gentleman who, after the cure of a chancre, suffered during two years with fourteen attacks of herpes preputialis, each attack lasting about ten days. The last time that the eruption made its appearance it showed itself on the body of the penis near its root; whilst sometimes it makes its appearance on the glans.

---

[1] Syn. *Exanthema labiale; hydroa febrile*, J. Franck; *olophlyctis labialis*, Alibert.

HERPES PUDENDALIS corresponds in every respect but situatio with herpes preputialis; it is developed on one labium.

CHRONIC FORMS OF HERPES.

THE CHRONIC FORMS of herpes are distinguished from the acut forms by their more general distribution; by their longer duration by a more superficial inflammation of the skin; by a tendency t spread; by less severe local suffering; by an absence of neuralg pain; and by a disposition to the production of larger vesicles, an often bullæ, *herpes bullosus;* in a word, the chronic forms of herp prepare us for a transition to the bullous affection pemphigus. Th varieties belonging to the chronic group are herpes circinatus an herpes iris; they have no special constitutional symptoms.

HERPES CIRCINATUS (zona herpetica, Plate IX. G), makes its ap pearance as red and slightly raised spots, which are accompanied wit considerable tingling and itching, and are apt to be mistaken for th bites of insects. In a few hours the spot spreads into a blotch half a inch in diameter, and soon after increases to the diameter of an inc or two inches. When it is larger than half an inch, it is found be slightly depressed in the centre; and with a further increase dimensions, the redness of the centre fades and becomes yellowis and a ring is produced. In the growing disk and growing ring th peripheral border is observed to be a little raised above the level the rest of the surface, and is somewhat brighter in its tint of red; is at this part that vesication begins, and the cuticle is raised in vesicles as large as peas upon the belt of the rings, in the course of few hours. The progress of the eruption is so rapid that that whic is a sprinkling of mere itchy spots at night, and a disturber of slee may, in the morning, be a crop of annular rings, each surmounte with a circle of glistening bullulæ as large as moderate-sized pea The vesicles are filled with limpid lymph, sometimes changing t opalescence and milkiness; they become wrinkled and collapsed i the course of the following day, and in a day or two more are con verted into thin brownish and blackish scabs. The redness of the patc fades with the collapse of the vesicles; its cuticle exfoliates, and i a few days no trace of it remains. But as the eruption is successiv in the development of the annuli, it may continue for ten or twelv days, or even for a longer period of time.

The development and maturation of the disks and rings is accom panied with more or less tingling, itching, and smarting, and the sensations subside with the disappearance of the patches; but as th latter are produced in succession, and commonly during the nigh the pruritus is often exceedingly severe. The ordinary size of th annuli is two inches in diameter; sometimes they are a little large and when the eruption takes place suddenly, at the first outburst the disease they may be smaller. In a case in which the limbs and part of the trunk of the body were nearly covered with the eruption in the course of two days, the physician who attended the patient remarked that it was a sight worthy of being remembered. The eruption was still troublesome in this case, although progressing towards cure, at the end of two months.

Occasionally from the beginning, but more frequently in the course of a chronic case of this disease, there are modifications of development of the eruption which are deserving of note. In the first instance there may be, scattered among the vesiculated rings, red blotches or disks, showing no disposition to vesicate; and secondly, there may be disks of moderate size completely covered by a single large bulla; and were it not for the general history of the complaint, we might be induced to pronounce the case to be one of pemphigus. In the example of herpes circinatus above noticed, in which the first attack of the eruption was developed suddenly, both the rings and the vesicles were pretty uniform in size over the whole body. As the case went on, the dimensions of the patches diminished, and in place of a row of vesicles, a single large bleb was produced; and later, when the patient's general health was improved with the aid of tonics, the effusion ceased to occur, and irritable erythematous disks only were apparent.

We have twice seen herpes circinatus bullosus associated with pregnancy, beginning with conception and ending with the completion of parturition. Both cases were remarkable for perpetual irritation and intense pruritic suffering. The bullæ were of the flat and foliaceous kind, some filled with limpid serum and others with a mucopurulent fluid, and were associated with moist excoriations, thin crusta, papulæ, and pruritus. In one patient the cutaneous disease was the first intimation of pregnancy; the disease continued during the whole period, accompanied four or five pregnancies in succession, and completely exhausted her strength and health. In other respects, and in the intervals of being pregnant, she was a strong and handsome woman. The other patient came before us at the age of thirty-six; she had had nine children; the eruption made its first appearance with the fourth pregnancy, and has accompanied every pregnancy since. When parturition was over the eruption ceased; but on the last occasion, nine months ago, it remained, and has now assumed a permanent character. She thinks, moreover, that at the present time she may be in the family way again. In both cases the eruption was accompanied with sympathetic gastric disturbance, and with a duskiness and cachexia of the skin.

Hardy has described this form of eruption under the name of *pemphigus pruriginosus;* he points out with great precision its prominent characters, namely, the small bullæ, sometimes serous and sometimes purulent; the violent pruritus subversive of comfort and sleep; the excoriations effected by scratching; the papulæ covered with small black scabs, as in prurigo; the duskiness of the skin; and the diffusion upon the skin of a serous fluid resulting from the rupture of the bullæ and the secretion of the excoriations, and attended with an unpleasant odor. And he illustrates the disease with the case of woman of thirty-five, who had had nine children and was far advance in pregnancy with the tenth. The eruption in her case appeared wit every pregnancy a few weeks after conception, and subsided and g well after parturition. Between her pregnancies she enjoyed goo health; and, as in our own cases, the children were healthy.

HERPES IRIS[1] is a lower form of herpes than herpes circinatus. is essentially, like some of the exhausted patches of the latter co plaint, a *herpes bullosus* propagated from the centre by a series efforts, too feeble to produce a row of independent vesicles, and resu ing only in the formation of annular ridges more or less distend with serous fluid;[2] it is, in fact, an aborted form of herpes circinat

Herpes iris occurs very commonly on the back of the hands elderly persons; and here the disks are small, and the central vesi equally so. When the affection shows itself on the limbs, and persons of reduced power, the central vesicle is an undoubted bul and the disk or patch may attain the dimensions of one or two inch in diameter.

The process of formation of herpes iris is as follows: an inflam spot or disk first makes its appearance; the day following, this di is covered by a vesicle or bleb, while a narrow border of red appea around its circumference; on the third day the narrow border of r is raised into a vesicular ring, and the redness has crept on for anoth stage, forming another narrow border of red; on the fourth and su cessive days, the same phenomena are repeated until the disk h attained its full size. The effusion, it will be observed, is m abundant in the central vesicle, and diminishes as the rings increa in number. The first ring is more distended than the second, t second than the third; with the third, the effusion generally ceas and the rings developed beyond the third are simply erythemato and distinguished only as shades of red.

The development of the disk of herpes iris undergoes some mo fications: occasionally, as in the disks observed on the back of t hands and feet of elderly persons, it never reaches beyond the eryt matous stage, and has been named, in consequence, *erythema iris*. other times the central bulla creeps on with the enlarging eryt matous line and forms a bleb; often of considerable size, *pemphig iris*; absorbing, as it proceeds, the annular vesicles of the circu ference.[3] In the erythematous form, as seen upon the hands, the are commonly not more than three shades of color; the centre r the first ring whitish or yellowish, and beyond this a narrow halo light crimson. On other parts of the body the number of rings m be increased to five or six, or even more. By watching the di from day to day, we have observed in some cases that a new ring produced daily, so that the number of rings determines the length of duration of the patch. In one disk we counted seven white rings, representing seven days, and seven circles of fading red between them, the outermost white ring being bounded by a narrow areola of pale crimson; while in another disk, only half an inch in diameter, there were nine different tints of color, which, from the centre to the circumference, were as follows: red, brown, white, deep red, lighter red, deep red, pale red, deep red, yellowish-white, and crimson blush. This appearance of the eruption sufficiently warrants the designation "iris," given to it by Willan.

---

[1] Syn. *Erythema iris; pemphigus iris.*

[2] Portraits of diseases of the skin; Plate VI. A Z, exhibits a well-marked cas this curious form of eruption.

[3] Dr. Marshall Hall has given an excellent description of this disease in the "Ed burgh Medical and Surgical Journal." He remarks that some of the patches att the diameter of an inch, and that the central vesicle sometimes becomes develop the size of a bulla, and obscures the concentric rings.

Herpes iris has no constitutional symptoms: it is always associated with debility, as in the debility of elderly persons, and sometimes, as in children, with nutritive debility and cachexia. It is in an asthenic state of the constitution that it more frequently takes on the pemphigoid form.

Diagnosis.—The diagnosis of herpes turns upon the size of the vesicles, larger than those of eczema and miliaria, smaller than the bullæ of pemphigus; upon the burning, tingling, pricking, and smarting itching; upon the frequent presence of neuralgic pains, and upon the orderly course of the eruption. The local varieties have small vesicles, sometimes multilocular vesicles; but they are always developed upon a patch of redness, and are accompanied with the pathognomonic tingling, smarting, and burning of herpes. Herpes circinatus is recognized by its circle of vesicles or bullulæ, and herpes iris by its centrifugal rings starting from a central umbo.

Cause.—The cause of herpes zoster, herpes phlyctenodes, and herpes auricularis is a chill, sometimes proceeding from a cold current of air, as in the prevalence of easterly winds, or sitting in a draft when the body is heated; or sometimes from the direct application of cold, as from sitting or lying on the ground, or the wearing of damp clothes. Herpes labialis, nasalis, and palpebralis, usually proceed from irritation of the adjoining mucous membrane, and follow a feverish cold or catarrh; and herpes præputialis and pudendi originate in some irritation of the neighboring mucous membrane. We have never seen an instance of herpes præputialis in which there has not previously existed a gonorrhœa, or some syphilitic affection. The cause of herpes circinatus and iris is a debility, a lowered tone of the system, sometimes referable to nutritive, sometimes to assimilative, and sometimes to nervous causes. We have at present under our care a patient who has suffered from herpes phlyctenodes, spring and autumn, for several years, the eruption being each time preceded by a bilious attack. The cases above narrated, accompanying pregnancy, must be referred to nervous debility.

Prognosis.—Herpes is not a grave affection, and is sometimes very trivial. In the neuralgic forms the pain is often terrible, and very difficult to conquer. The circinate form and herpes iris, as they indicate a constitutional debility proceeding from a general derangement of health, are of most importance in reference to the health and safety of the patient.

TREATMENT.—The treatment of herpes zoster, phlyctenodes,
the local forms, when unaccompanied with neuralgic pain, is pu
local; if neuralgia be present, constitutional as well as local treatn
will be requisite; and the chronic forms also call for constitutiona
well as local remedies.

As the acute forms of herpes are limited in extent, and have a
ular course of a certain number of days' duration, all that we
called upon to do in the majority of cases is to protect the infla
skin from pressure or friction. To this end we shall find no b
means than dredging the eruption copiously with flour, and co
ing it there by means of a sheet of cotton wool, held in its plac
strips of adhesive plaster or a bandage, not too tightly applied.
have also found a thick coating of the benzoated ointment of oxi
zinc, afterwards covered with a sheet of cotton wool, and retaine
its place by strips of adhesive plaster, very successful. When
burning heat and tingling are very troublesome, we have obta
ease from arrowroot poultices, made by filling a muslin bag wit
rowroot jelly and applying it cold; from a thin paste of precipit
chalk, applied with a brush; and at other times from folds of fla
saturated with a decoction of poppy-heads. Bateman recomm
lotions of sulphate of zinc, sulphate of alumina, and borate of sod

Experiments have been made with ectrotic remedies, but thei
vantage has not been fully established; the best of these is a sol
of nitrate of silver in nitric ether, which we have known to give
siderable relief. It is a good application for all the local forms,
ticularly herpes preputialis. We have sometimes applied a sol
of potassa fussa, in equal parts of water, with the result of imm
ately checking the course of the eruption. Another mode of u
the nitrate of silver is to puncture the vesicle, and, after absorbin
lymph, to touch its base with a point of the caustic. With the
forms this plan answers extremely well. The patches may al
pencilled with carbolic acid. Plumbe suggested a strip of blist
plaster as a means of checking the extension of the inflammation,
also of "producing a shrivelling of the vesicles, and cutting sho
progress altogether." Collodion and Goulard's extract have had
advocates, and also a solution of perchloride of iron with laudan

In the neuralgia of herpes we must have recourse to quinine, ci
of quinine and iron, and arsenic; or if there be evidence of a rheu
diathesis, iodide of potash; and of a gouty diathesis, colchicum;
as sedative remedies, to belladonna, hyoscyamus, morphia, and
rodyne. Locally, the treatment must be sedative and stimulant;
parations of aconite, belladonna, morphia, chloroform, cajeput, ma
be used in their turn. We have employed blisters without muc
sult, but have derived the greatest advantage from the oleum jun
pyrolignici, combined with chloroform and tincture of aconite.
three cases of this kind we found tincture of opium with tinctu
aconite, rubbed into the painful part, procure relief; but in other
the remedy has failed. Nothing can be conceived more dreadful
the pangs accompanying herpes, sometimes become. A gentl
whom we once asked to give us an idea in words of the nature

suffering, replied, "You must fancy the marrow taken out of the bones of my arm, and a rough towel threaded through them; you must then imagine two devils at work with all their strength, one at each end of the towel, sawing it backwards and forwards; that is what it is like." In the region of the scapula, around the thorax and around the abdomen, the pain is sometimes dreadfully severe. Dr. Ranking records the opinions of Dr. Palmer and Mr. Humpage on the local treatment of this painful affection; the former recommends the application of the tincture of arnica, and the internal use of the oxide of silver; the latter proposes a blister followed by a belladonna plaster. Dr. Ranking himself suggests the endermic use of morphine, or electro-magnetism. Flying blisters have also been recommended.

The chronic forms of the eruption should be washed with the juniper-tar soap, and sponged with a lotion of the juniper tar, or with hydrocyanic acid in emulsion of bitter almonds, to allay the itching; and afterwards anointed with the benzoated ointment of oxide of zinc, combined with spirits of wine or spirits of camphor, or a simple camphor cerate. When the vesicles are broken and the corium excoriated, dressings of the benzoated ointment of oxide of zinc on lint should be applied; or the surface dusted over with pulvis cinchonæ.

MILIARIA.

Syn. *Miliary vesicles; miliary eruption; herpes miliaris; hydroa; sudamina; die Friselblattern, die Schweisblattern*, Germ.

MILIARIA is the name which is given to an eruption of small globular vesicles of a size corresponding with that of the *milium*, or millet-seed. They are the consequence of a weak and exhausted state of the skin, induced by heat and perspiration, and are commonly associated with fevers, with the puerperal state, with rheumatism, or any ailment which renders confinement to bed for a lengthened period a necessary condition. From the latter circumstance the eruption has been termed *miliaria clinica*, and, from its combination with perspiration, the vesicles have been named *sudamina*.

The vesicles of miliaria are larger than those of eczema, but smaller than the vesicles of herpes, and necessarily, very much smaller than the bullæ of pemphigus; nevertheless, they are frequently of a size to suggest the idea of the former, while in their origin they have some of the characters of the latter. They originate in a debilitated condition of the cutaneous tissues, like pemphigus; like the latter disease also, they indicate an exhausted state of the vital power, and they are produced with little cutaneous congestion. But unlike pemphigus, they are generally symptomatic of an independent febrile state of the constitution, and their course is acute.

At their first eruption the vesicles are filled with a transparent and limpid serum, which reflects the color of the denuded derma at their base. This gives them an appearance of redness, and has gained for the disorder the name of MILIARIA RUBRA. But in twelve or twenty-four hours the serum becomes opalescent, whitish and milky, and in this state the appearance of the vesicles has given origin to MILIARIA ALBA.

The vesicles are met with most frequently on the sides of of the body; on the inner side of the upper arms; in the a the back and on the neck; in situations, in fact, the most suffer from heat and perspiration during illness. They are s evolved in patches of various size, but, more commonly, are singly over the surface. They appear in succession, each break lasting three or four days, but the eruption, as a whol uing for one or two weeks. The vesicles sometimes break, frequently collapse, from absorption of their contained se the desiccated cuticle forms a small thin scab, which in a s is removed by desquamation.

Miliaria has no constitutional symptoms; but its associa fevers suggested the term *miliary fever*, formerly applied to it there seems to be good reason for the belief that its frequen mer times, and its comparative rarity at present, are to be by the better method of treating fever in our own days, an servation of a cooler state of the body; the condition the mo ble for the production of miliaria, being a hot and perspir such as would result from hot rooms, excess of bedclothes, an regimen and remedies. To these latter conditions in partic be referred the miliaria of puerperal patients. Miliaria is accompanied with sensations of languor, of extreme exh feeling of faintness, and oppression of breathing; sympto are attributable to the perspirations, rather than to the erup the perspiring state of the skin is also made evident by the acid odor of the sick-room. In chronic miliaria the urin commonly albuminous.

Since the days of Sydenham, who advocated so powe adoption of a cool temperature and cooling regimen in feve mina have become rare; but previously to his time they wer ingly frequent, and from their connection with fever, were as a specific disorder, preceded and accompanied by severe gerous fever. This fever was termed miliaria, and for m was regarded as a dangerous and fatal disease, spreading li demic, and destroying multitudes of lives; but since a mor method of treatment has been employed in medicine, miliary ceased to exist. Bateman remarks, "It is scarcely necessar enter into any detail of proofs that the miliary eruption is t of a highly heated and perspiring state of the skin, and t severe and fatal degree it is solely the effect of a stimulating in a confined atmosphere. The almost total annihilation o ease, of late years, since the general adoption of a better pra isself unequivocal evidence of its origin." "Hippocrates, wh of treatment in febrile diseases was not calculated to produc ment, has once or twice, but casually, mentioned the miliary And again, at the latter part of the seventeenth century, wh practice of the majority of physicians, the miliary fever was a and fatal occurrence, Sydenham witnessed no such fever, but the occasional appearance only of miliary vesicles, which he ascribes to their proper cause."

"Among the various circumstances," continues Bateman, "under which the miliaria was formerly excited, the puerperal state appears to have been most frequently the source of it; insomuch that it was first described as an epidemic among puerperal women. This is sufficiently accounted for by the treatment which was unhappily pursued during the confinement after child-birth, and of which an impressive description is given by Mr. White. For not only was the mother immediately loaded with bedclothes, from which she was not allowed to put out 'even her nose,' and supplied with heating liquors from the spout of a teapot; but to her room, heated by a crowd of visitors and a fire, all access of air was denied, even through a keyhole. From these causes fever was almost necessarily induced, with the most profuse sweats, oppression, anxiety, and fainting; and these again were aggravated by spicy candles, spirits, opiates, and ammoniacal medicines. That numbers should perish under such management, with every symptom of malignity, and that many who survived it should escape with broken constitutions, will surprise no person who is acquainted with the baneful influence of over-excitement in febrile complaints."

Diagnosis.—The size of the vesicle is pathognomonic, as is also the absence of inflammatory congestion at its base. It is smaller than the vesicle of herpes, generally scattered, and wanting in the burning, tingling, and pricking of the latter; while it is too small to be mistaken for pemphigus; indeed, is a vesicula and not a bulla.

Cause.—Debility of cutaneous tissue, generally the consequence of too much heat, and a resulting excess of perspiration.

Prognosis.—The prognostics of the eruption are dependent on the illness which it accompanies, or upon the degree of power of the constitution.

Treatment.—The constitutional management of miliaria must be directed to the cure of the disease with which it is associated. Quinine, with sulphuric acid, or the aromatic sulphuric acid, is generally of service. Its local or special treatment must have for its object, to give tone to the tissues of the skin, by means, for example—of tepid baths; of washing with tepid water and the juniper-tar soap; of sponging with a tepid solution of ammonia, of a strength sufficient to act as a mild or tonic stimulant; or with tepid vinegar and water. These are means that cannot affect injuriously the disorder in chief, but may possibly be of use to it. In a more prostrate condition of the system, we may prescribe the powder puff; and as the body acquires strength, may venture to reduce still further the temperature of our local applications.

PEMPHIGUS.

Syn. *Pompholyx; pemphix; ecphlysis pompholyx et pemphigus;* **Mason Good**; *fièvre bulleuse*, Fran.; *Blasenausschlag; Wasserblasen*, Germ.

Pemphigus is an eruption of bullæ arising from a very slightly inflamed ground, and distributed more or less extensively over the surface of the skin. The bullæ arise in the course of a few hours, with some tingling and smarting, and often without redness. They are distended with a serous fluid, burst in one or two days, and leave an excoriated surface, which soon becomes covered with a thin brownish or blackish scab. On the desquamation of the scab, the skin is left of a dull red tint, sometimes livid, and frequently stained with a brownish discoloration.

The bullæ vary in bulk from the size of a pea to that of the hemisphere of a walnut, or a hen's egg; they commonly cover the whole of the inflamed disk on which they arise; and their contents, at first limpid and straw-colored or amber-colored, become opalescent and milky, sometimes semipurulent, and not uncommonly purple, from admixture with blood. Sometimes, instead of bursting and leaving a red and angry excoriation prone to bleed, the bullæ become wrinkled and collapsed, and dry up into a thin corrugated scab, which is either grayish, light-brown, or black, according to the character of the serous contents; and sometimes the collapse is only partial, covering part of the base, and leaving a vesicular roll around a part of the circumference; and sometimes this last-described corrugated and collapsed form is present from the beginning, and never rises to a fully developed bulla, but produces on desiccation a thin corrugated scab, which being frequently oval in outline, suggests the idea of a dried leaf adhering to the skin: this appearance has given origin to the term *foliaceous*, applied to one of the varieties of pemphigus.

The bullæ of pemphigus are commonly thrown up in clusters of three or four, to twelve or even a greater number, and not unfrequently have separate bullæ dispersed between the groups. Each bulla runs its course in one or two days; but as others appear in succession, a few fresh clusters occurring every day, or every two or three days, the eruption is prolonged for some weeks, and more commonly for several months or years. The affection is therefore essentially *chronic*, and differs in different persons only in degree of chronicity: the term *acute* is not reasonably applicable to pemphigus. Occasionally the disease is limited to the production of a single bulla, *pemphigus solitarius*, which attains a very considerable size, often as large and even larger than a large orange.

Pemphigus has been called *acute*, in consequence of being occasionally preceded by a little fever, and terminating in a few weeks; but in general it is chronic and lasts for a considerable period. It usually denotes a low and debilitated and asthenic state of the constitution, and is associated with bleeding from the excoriated skin; vesication of the mucous membrane of the mouth, nose, vulva, and vagina; and hemorrhage from the bowels, from the kidneys, and sometimes from the stomach and lungs. The skin in general corresponds with this morbid state, and is often dry, shrivelled, and discolored.

The local suffering attendant on pemphigus is a moderate amount of itching, tingling, and smarting on the first appearance of the eruption, and extreme soreness and sensitiveness in the state of excoriation.

It is a rare affection, and more rare possibly in this country than in others; it is also more frequent in women, and especially in young women, than in men, and is most common in children. Amongst the children of the poor it is apt to show itself in the form of purple and livid spots that tend to gangrene, *pemphigus gangrænosus*; and amongst the ill-fed poor in Ireland, the gangrenous form sometimes prevails as an epidemic.

There are few affections to which so many varieties have been assigned as pemphigus, and its synonym pompholyx; for example, pemphigus congenitus, infantilis, simultaneus, successivus, solitarius, confluens, confertus, acutus, chronicus, pyreticus, apyreticus, vulgaris, benignus, diutinus, contagiosus, gangrænosus, foliaceus, pruriginosus, &c.; but for practical purposes they may all be included under the five following heads; namely,—

Pemphigus vulgaris,
" solitarius,
" gangrænosus,
Pemphigus foliaceus,
" pruriginosus.

Pemphigus vulgaris[1] (Plate VIII.) is the common and usual form of the affection: in its milder aspect, and lasting only a few weeks, it has been termed pemphigus acutus and pompholyx benignus; but as we have already shown, its symptoms are not sufficient to characterize an acute disease; and all we can accord to it is; that it is less chronic in some cases than in others, and undoubtedly milder, *benignus*.

Sometimes some slight febrile disorder precedes the eruption; but at other times it is unattended with any symptoms but those which belong to the depressed state of health in which the disorder originates. In several instances we have seen it associated with that form of nervous debility and irritability which is commonly termed hysteria; in one case the eruption occupied the sternal region of the chest and epigastrium; in another, the inner side of the thighs; and in a third, the hands and fingers, and one hand in particular. This latter case was remarkable for the excessive fetor of the exuded fluid, a fetor resembling that of the ozæna of young hysterical females, and suggested a comparison with that distressing malady. We regard the pathological process as identical in the two affections, and have thought it worthy of being distinguished for further observation by the name of *pemphigus ozænodes*. The patient was a girl of nineteen, somewhat anæmic, with pallid, puffy, and somewhat bloated countenance, and subject to occasional fits of hysterical affection.

The chronic form of pemphigus vulgaris, the pompholyx diutinus of Willan, is distinguished by the prolonged continuance of the erup-

---

[1] Portraits of diseases of the skin, Plate VII.

appearance to the skin, particularly when they are abundant
when they are shed, are frequently replaced by other scabs of s
formation. At first, there is a sprinkling of fully or partially-fo
bullæ, with the scales; but after a while, the desquamation e
alone, the skin being deeply congested and exuding a serous s
tion. The foliaceous scabs are produced with such activity, that
few hours, according to Hardy, the bed of the patient is filled
them. At a later period of the disease, when the skin is about ret
ing to its natural state, there is a reappearance of the bullæ.

Pemphigus foliaceus is rare, and commonly begins on the brea
a single bulla; the bulla spreads by the circumference; other l
are produced around it; in a short space of time vesiculation ex
to the greater part of the surface of the body, and the derma is
or less completely denuded; it is attended with extreme prostr
of power, and is generally fatal.

PEMPHIGUS PRURIGINOSUS is a name given by Hardy to an a
vated form of herpes circinatus associated with general rednes
infiltration of the skin and troublesome pruritus. We have desc
this disease as a herpes circinatus, occurrring during utero-gest
Its chief peculiarity is excessive itching, and Willan seems to a
to a similar affection in remarking that chronic pemphigus is s
times complicated with prurigo. In elderly persons, he observes
complication excites the most distressing irritation, and often cau
fatal termination. The bullæ are imperfect, frequently formin
more than a serous roll along the circumference of the patch
they exist very numerously distributed over the surface of the l
In one of our own cases the eruption occurred with every pregn
and at last grew to be insupportable.

DIAGNOSIS.—The distinctive characters of pemphigus are, its
vesicles or bullæ. The large vesicles of herpes circinatus
approach in size those of pemphigus, and, as we have seen, cons
a transition-link with pemphigus itself.

CAUSE.—The cause of pemphigus is a general and local deb
approaching to cachexia. We have recorded two instances v
followed local injury; in one of them, a servant girl "poisoned'
hand with a red paste, with which she was cleaning brass; a few
afterwards a crop of bullæ, intermingled with ecchymosed spots,
out on her wrist and forearm, and continued to trouble her from
to time for seven years. The other case was that of a medical
who punctured his right hand; three or four weeks afterward
eruption of bullæ made their appearance on his left thigh, and
repeated from time to time for eighteen months. Their outbreak
preceded by feverish symptoms; there was a scalded sensation i
skin, and the next morning a fully-developed bulla would be
covered. It is often sympathetic with irritation or defective fun
of some part of the mucous membrane, and especially that o
uterine system; and sometimes is met with in an epidemic form

PROGNOSIS.—As pemphigus is indicative of a serious amou
local and general debility, and as the cause of that debility is di

of detection, and may depend upon some radical defect in the economy, the prognosis must always be doubtful and unsatisfactory. The ultimate result must depend upon the powers of the constitution, and these will be influenced very much by age, position in life, and other circumstances. Rayer narrates that he once saw a man who, after having had several attacks of hæmoptysis, became subject to chronic pemphigus of the legs, and from this period the bleeding from the lungs did not recur. He also observes that the cure of pemphigus has, in some cases, been observed to be followed by various ill consequences.

TREATMENT.—Treatment must be chiefly constitutional; any disorder of digestive function and secretions should be regulated, and then we must rely upon tonics; the bitters with mineral acids, especially the hydrochloric; cinchona with sulphuric acid; quinine; and citrate of quinine and iron. We have also derived good results from the use of arsenic.

If there be feverish symptoms, we may find it necessary to have recourse to effervescent salines, with ammonia; to sulphate of magnesia, with quinine and infusion of roses; and to chlorate of potash.

Locally we should puncture the bullæ as soon as they are fully developed, in order that the cuticle may fall down upon the denuded corium, and form upon it a covering of protection; then we should dress the eruption with the benzoated ointment of oxide of zinc spread on lint, and afterwards cover the dressing with a sheet of cotton wool. We may, if occasion arise, vary this dressing with one of ceratum calaminæ, or simple cerate with which a few grains of the superacetate of lead (gr. v ad ℥j) have been rubbed down. If there be much sensitiveness of the excoriated skin, we may allay it by the use of a weak solution of nitrate of silver (gr. j—iij ad ℥j), and dress it as above, renewing the dressing night and morning, and keeping it in its place with adhesive strips or with a bandage. And in case of moist discharges, the excoriations may be dusted over with pulvis cinchonæ. We have also derived good results from lotions of carbolic acid, chloride of zinc, and the tinctura picis cum sapone.

In pemphigus foliaceus and pruriginosus we shall find ablutions with the juniper-tar soap and warm water of great use in removing the scales and relieving irritation; and afterwards we must anoint the surface with the benzoated ointment of oxide of zinc; or if the pruritus still be annoying, with the ointment of the pyroligneous oil of juniper; the excoriations being dressed as above with the benzoated ointment of oxide of zinc rubbed down with spirits of wine or spirits of camphor.

In the epidemic pemphigus gangrænosus, Dr. Stokes recommends an ointment of scrophularia nodosa, containing as much green vegetable matter as possible. He remarks that this is a traditional remedy, but he found it more successful than any other plan of treatment. The ointment should be warmed until it possesses the consistence of honey, and then laid on with a brush, and dressed with the same spread upon lint. The utmost gentleness should be used, and the dressing renewed every six hours. Where there is swelling of the surrounding parts, or when any powder has been previously used, he applies, in the first instance, a poultice of porter and oatmeal, or a carrot poultice in a state of fermentation.

The diet in pemphigus should be of the nourishing kind, meat and wine, unless any contraindication arise.

CHAPTER VIII.

FURUNCULAR AFFECTIONS.

Under the head of Furuncular affections, which properly includ Furunculus, Hordeolum, Anthrax, and Pustula Maligna, we hav likewise grouped Ecthyma, as being otherwise isolated, and as presenting several points of affinity with furunculus; for example, it i sometimes associated in the same eruption with furunculus; it is disease of a pyogenic character; it very commonly ulcerates an sloughs; is essentially an affection of low constitutional power, an evinces a tendency, on the part of the constitution, to cachexia.

Ecthyma is a pustule; indeed is the type of the order Pustulæ o Willan, and is consequently united in that group with impetig From impetigo, however, it differs more than from furunculus; fo impetigo is a psydracious pustule, a sero-pustule, a surface affectio an exudative pustule, developed not singly like ecthyma, but i clusters, with less local inflammation, and without any tendency t ulcerate. Moreover, the alliance between ecthyma and impetigo i dissolved by the union of the latter with eczema; and in consequenc of the removal of other diseases from the same order, would be le alone unless joined with furunculus.

The essential points of difference between ecthyma and furunculu are, the frank suppuration of the former, and the presence of a cor of cellular tissue in the state of grangrene, in the latter.

ECTHYMA.

Syn. *Ecpyesis ecthyma*, Mason Good; *phlyzacia; papulous scall.*

Ecthyma (Plate X. H–Q) is an eruption of large pustules disperse over the body and limbs more or less extensively; rarely genera more commonly limited to a part, as to the lower extremities. Th pustule is hemispherical in figure, distended with a deep yellow pu mounted on a hard and prominent base, and surrounded by a red an highly inflamed areola. The pustule ulcerates more or less deeply has an average duration of ten or twelve days; dries up into a thic grayish-yellow or brownish scab, which is firmly adherent to the ski and leaves at its fall a purplish-red and pitted cicatrix. The pustul are successive, and the eruption is consequently prolonged for several weeks or months.

The eruption begins with a little itching and tingling, and with the appearance of a small inflamed pimple; the pimple increases in size, a little pus is formed on its summit, and it is quickly converted into a round hemispherical pustule, with a hard and inflamed base. The pustule bursts in three days, and the pus, together with the plastic lymph secreted by its base, dries up into a yellowish-gray and brown scab. If the scab be detached too soon, a small ulcer is exposed, which forms a secondary scab, and the latter remains attached for a considerable time, and at its fall leaves a more extensive and deeper pit.

This is the course of the pustule in the *acute* form of the disease, lasting for eight or ten days; and the eruption is said to be acute when it is composed of pustles of this kind, following each other in succession for three or more weeks; but in a cachectic state of the constitution, the pustules have a *chronic* character; the redness is deeper in hue, approaching to livid; the pustule is purplish from admixture of blood with the pus; at its rupture a painful, ulcerated, and often sloughing surface is exposed to view; the crust formed over this ulcer is more or less black; the edges of the sore are thin and livid; and the ulcer is slow in progress, very painful, and of long duration. This character of the eruption is the basis of the varieties termed ecthyma luridum and ecthyma cachecticum; while in an extreme degree of cachexia there may be a gangrenous condition of the ulcer, a condition warranting the adoption of the term ecthyma gangrænosum.

The pyogenic tendency of ecthyma, its proneness to ulceration, to sloughing, and sometimes to gangrene, indicate a low tone and debility of the constitution, that may be associated with symptoms of general disturbance of health and more or less fever of the irritable or hectic kind; but there are no constitutional symptoms that can be attributed especially to ecthyma.

The pyogenic condition of the system in ecthyma is indicated by the frequent presence of superficial abscesses; a disposition to suppurate in slight wounds and scratches of the skin, and the formation of whitlows; and the cachectic tendency of the constitution is shown by the frequent occurrence of inflammation of the lymphatic vessels and glands. It is not contagious; although not unfrequently epidemic.

The VARIETIES of ecthyma are acute and chronic. *Acute* ecthyma is the ecthyma vulgare of Willan, to which Hardy adds a form almost unknown in England, ecthyma gangrænosum. The *chronic* varieties are, ecthyma infantile and ecthyma cachecticum; the latter including the ecthyma luridum of Willan. In a tabular form they are as follows:—

ACUTE.	CHRONIC.
Ecthyma vulgare,	Ecthyma infantile,
" gangrænosum.	" cachecticum.

ECTHYMA VULGARE (Plate X. H–N) is the more common and simple form of the eruption, that in which the pustules run the acute course already described, although the eruption may be prolonged by the successive appearance of pustules for two or three or more weeks, or by its continuance deserve to be considered as chronic. There is more tone and power of constitution in this than in the other forms, and the symptoms are milder in character. The pustules are for the most part developed on the extremities, particu larly the lower limbs, the shoulders, and the neck, and more commonly in children than in adults.

ECTHYMA GANGRÆNOSUM is the name given by Hardy to an acut form of ecthyma, which he appears to have seen only once, and in man exhausted by age and misery. The eruption made its appea ance in the shape of phlyzacious pustules, with an areola of a brown ish-red color at first, and afterwards gray. A circular eschar succeede by unhealthy ulceration, formed on the second day, and was followe in five or six days by death. Hardy asks whether this may not b the rupia escharotica of authors? We think it not unlikely; fo substituting children for the aged, it corresponds very nearly with th pemphigus gangrænosus of Dr. Whitley Stokes, the true representa tive of the older rupia escharotica.

ECTHYMA INFANTILE (Plate X. H–Q) is more commonly chroni than acute, that is, its pustules are slower in their course; they a more commonly surrounded with a purplish or livid areola, and a more prone to fall into a state of unhealthy ulceration. They a met with in infants at the breast, and in ill-fed and ill-nourishe children. Bateman remarks that they not only make their appea ance on the extremities and trunk, but also on the scalp, and eve on the face, situations in which only ecthyma cachecticum ordinaril occurs.

ECTHYMA CACHECTICUM is the chronic ecthyma of the adult, as ecthyma infantile of infants and children. Its milder characte bring it under the denomination of *ecthyma luridum* of Willan; whi in a more advanced degree of cachexia it may present every shad of dark red, purple, and livid in color, and every variety of ulceratio sloughing, and painful irritability. Although common to every ag in the adult where the powers of the constitution are reduced, it more frequently met with amongst the elderly. There can be n doubt that many syphilitic eruptions were treated as forms ecthyma by Willan and Bateman, and that the prevailing cachexi noticed by them originated in syphilis. At present we are bette informed as to the characters of constitutional syphilis, and less likel to fall into errors of that kind; and in proportion to our advance i knowledge in this respect, our examples of ecthyma have becom reduced in number.

DIAGNOSIS.—The distinction of ecthyma is simple; its large wel formed pustules, scattered singly over the body, with hard and i flamed bases, are unlike everything else. The pustules of impetig are only half-pustules, sero-pustules, in fact; they are small, cluster without hardness or much redness of base, and are commonly associated with other characters denoting eczema. The pustules of smallpox are phlyzacious, like ecthyma; but they are more numerous; they form part of a general eruption, and they are accompanied with special constitutional symptoms. The pustules of syphilis may also be phlyzacious, and only distinguishable from ecthyma by the other symptoms of that disease; indeed a pustular syphiloderma may be an ecthyma developed under the influence of the syphilitic cachexia.

CAUSE.—The cause of ecthyma is debility, both constitutional and local; the constitutional debility in children and elderly persons being of the nutritive kind, and in adults sometimes assimilative and sometimes nervous. To this may be added local debility, or debility of tissue. In infants and young children, errors of diet, dentition, and errors of hygiene, take a prominent position as remote predisposing causes; and in adults and elderly persons all those causes which tend to exhaust the powers of the constitution. A child two years of age has an attack of ecthyma with every tooth she cuts; a lad of fifteen, of strumous habit, determined by nutritive debility, has been the subject of ecthyma of the legs for four years. All causes tending to occasion cacochymia and cachexia are favorable to the production of ecthyma. Among the local causes may be enumerated irritants of all kinds: a common one in lympathic and weakly children is the acarus scabiei. The pustules excited by the action of tartarized antimony on the skin are phlyzacious and ecthymatous; and Hardy calls our attention to an example of excito-sensory action manifested by the development of a crop of ecthymatous pustules on the back, at a point opposite another crop on the front of the chest, the latter being determined by the direct irritation of a blister.

PROGNOSIS.—Like other diseases manifesting a constitutional debility, a tendency to pyogenic transformation, to ulceration, and cachexia, ecthyma is grave without being serious or dangerous. It requires careful watching, and calls for the combination of all the resources of the medical art.

TREATMENT.—The treatment of ecthyma is constitutional and local. The constitutional treatment embraces a tonic regimen in the way of air, exercise, and diet; and tonic remedies, including bitters, mineral acids, bark, quinine, steel, and cod-liver oil. Arsenic is not indicated otherwise than as a tonic.

The *local* remedies are such as will stimulate the skin moderately; for example, ablution with the juniper-tar, or carbolic acid soap and tepid water night and morning, and dressing with the benzoated ointment of oxide of zinc, with calamine cerate, or with the unguentum resinæ. In a cachectic habit, an ointment of friar's balsam or camphor will be found an useful stimulant; and if there be much irritability, a weak solution of nitrate of silver may be used to pencil the inflamed surface; or the pustules may be touched with a weak solution of carbolic acid or chloride of zinc. In a sloughing state of the ulcers, stimulating remedies are especially called for, and the surface may be dusted over with pulvis cinchonæ. Poultices and sloppy remedies of all kinds are undesirable.

FURUNCULUS.

Syn. *Phyma furunculus; boil.*

The general character of the furuncular eruption is an inflammation of limited extent, sinking deeply into the skin, forming more or less prominence on the surface, and resulting in the loss of vitality of a portion of the substance of the derma. The portion of the substance of the skin so destroyed is the heart of the boil, the core (*cœur*), and the suppuration which follows has for its object the separation and expulsion of the core. The degree of prominence of the boil would seem to depend on the depth of the portion of the skin attacked; when the latter is superficial, involving parts which are looser in texture and more susceptible of distension, the prominence is greatest; but when the inflammation sinks deeply, the prominence is less, although the mischief may be considerably greater, and the case in every way more serious, being attended both with a greater amount of pain, and being much slower in its progress. This, and the extent of the skin attacked, are the prime distinctions between the furunculus and the carbuncle: in furunculus there is but one core, and the core is less deep; in carbuncle there is more than one core, and the cores extend deeply into the derma. Thus, mere size is only a secondary feature in the diagnosis between furuncle and carbuncle; a large boil may be larger than a small carbuncle; although the carbuncle, being an aggregated boil, is generally much more extensive than the furunculus, sometimes reaching to a diameter of six or even a greater number of inches.

The characters of distinction between furunculus and anthrax relate to their prominence, depth, breadth, color, number of cores, and degree of pain. Furunculus is more prominent than anthrax; but the latter extends most deeply into the skin, and involves a greater breadth of the structure of the derma. The color of furunculus is a deep red, becoming, as the disease advances, more or less dull and bluish; that of anthrax presents the same tints in a heightened degree, the deep red is still deeper and darker, often approaching a mahogany hue, and the bluish tint of furunculus becomes a deep purple and livid tint in anthrax. The core, which is single in furunculus, may be multiplied to twenty or thirty in anthrax, until the numerous openings formed on its surface for the exit of the cores give it the appearance of a sieve or colander. Lastly, the pain, severe in furunculus, is more intense and more burning in anthrax.

Furunculus and anthrax, together with HORDEOLUM, or sty, which is a small boil occurring upon the edge of the eyelids, in connection with one of the meibomian glands, are grouped by Willan under the genus PHYMA; the latter term φῦμα derived from φύω, *produco*, signifying a tuber, tubercle, or small swelling, and applied by Hippocrates nd the older writers to a suppurating tumor; hence the designations, hyma furunculus, phyma hordeolum, and phyma anthrax. Phyma the first genus of the order Tubercula of Willan; Plenck makes it genus of his class Bullæ, under the popular term "eiterblasen," *pus-ladder;* while he places terminthus with the popular signification "erbsenblattern," *pea-bladders,* among pustulæ.

The term furunculus is derived from *furere,* to rage, and is expresive of the severity of the pain which often accompanies the eruption; hile the term anthrax, ἄνθραξ, carbo, in quo ἀνθεῖ, id est, floret ignis, burning coal, indicates a greater degree of severity, and an intense urning pain. To a boil which is more painful at night than during he day, the term EPINYCTIS (ἐπινυκτὶς ὅτι νυκτὼρ ἐγένετο, quoniam noctu ritur) has been applied. Anthrax presents two varieties not recogized at the present day, namely, pruna and terminthus. PRUNA, a rm used by Avicenna, is a carbuncle surmounted by a black eschar; hile TERMINTHUS, or terebinthus, is a variety of carbuncle of which he core or slough has been likened in shape and color to the ripe one of the pinus abies, or turpentine-tree.

FURUNCULUS, or boil, is a small tumor, more or less prominent nd conical, of a vivid or deep-red color, hard to the touch, excesively tender and painful, slow in reaching maturity, suppurating mperfectly, and containing a central core or slough of mortified cutaeous tissue. After the ejection and separation of a grayish and ulpy slough, the sore heals slowly, the affected skin remains for ome time congested and discolored, and a permanent cicatrix is left ehind.

Boils may occur on any and all parts of the body; they rarely ppear as a general eruption, but are successive in their invasion; and re usually more abundant upon some one region than upon the rest, lthough by no means confined to a single region. Their common ocality is the back of the neck, the shoulders, the armpits, the wrists nd hands, the buttock, the perineum, the labia pudendi, the thighs, nd the legs; and they are more commonly met with in the thick skin f the back of the trunk and outer side of the limbs than upon the ront of the trunk and inside of the limbs. This remark does not, owever, apply to the eruption when it attacks the armpits, the labia udendi, the meatus auris, and the inside of the buttock, all common ocalities. Among other situations, we have seen boils on the eyelids, n the nose and ears, on the integument around the mouth, on the heeks, and on the scalp.

The boil begins as a small red point in the skin, frequently painful rom its origin, and tender to the touch; passing the finger over it, it s felt to be harder and deeper than a common papule, and the tissue round it is evidently condensed; it is gradually and slowly expandng itself in the skin, and threatening the mischief which never fails o follow. Slow and certain in its progress, the integument is gradully raised into a prominence of a more or less conical figure; the urface is at first red, then vividly red, then purplish red, sometimes deep dull red, and sometimes purple, and even livid. After some ys (four to six), a point is seen in the centre of the cone, showing that pus has commenced to form, or a blister is raised; the skin give way, the pus escapes, the core or slough is brought into view, and after a time, several (four to six), often many days, the slough is suffi ciently loosened by the formation of pus between it and the soun tissue, to be thrown off: granulations are then formed on the surfac of the cavity, the cavity contracts, granulations shoot up and reac the surface, and cicatrization takes place; the process of reparatio being extremely active (two to four days), when compared with th of separation of the slough.

The process now described is attended with pain, intense pain, *cre* [illegible] the tumor is excessively tender, "as sore as a bile," and t pain is curiously increased at night, reminding us of one of t symptoms of the disease, namely, epinyctis. The great pain at nig very probably results from the inactivity of the muscular system an the relaxation of the mind from its daily office, aided, no doubt, b the horizontal position of the body, the warmth of bed, the stillne of the time, and the necessity for a state of calm and insensibilit The pain attendant on a single boil is prolonged for two, three, an sometimes four days; and when the eruption is successive, the pain one is only obliterated by that of another, until the patient is wor out with suffering. Some persons are so happily constituted as their nervous system that they suffer but little, while others endu the most dreadful agony. Certain differences naturally result fro the seat of the boil; a small boil in the meatus of the ear, pressin upon tissues incapable of resistance, from their inclosure by bone an confinement by strong ligamentous bands, almost crushing the nume rous and sensitive nerves of that region, nerves which are in intima communication with all the most important nervous trunks of t body, is painful to agony, to frenzy; while, by the same patient, large boil in another situation, where, from the nature of the tissu [illegible] ability of expansion exists, would be regarded as a mere inco venience. A boil is painful in relation to the density or confineme of the tissues in which it occurs, and in relation to the neighborho of sensitive nerves. A boil in a part of the skin supplied by the t [illegible] nerve, and involving a filament of that nerve, is intensely pai [illegible] a boil in the skin of the nose, tied down to the cartilages [illegible] fibrous tissue; or in the lip, where every beat of t [illegible] seems to vibrate through the system; in the pe [illegible] where the skin is also fixed by strong fibrous tissue; in t [illegible] where the part is apt to swell almost to bursting; i [illegible] where many filaments of nerves are distributed; or in t [illegible] where the nerves are also abundant and sensitive.

[illegible] of boils, it is not all that run the course described [illegible] paragraph; some stop at different periods of their pr [illegible] do not survive the stage of pimples; others acquire [illegible] but neither suppurate nor slough: these are the so-call [illegible] gradually and slowly subside; their contents, if an [illegible] they entitle themselves to the distinction of *indol* [illegible] certain number only reach perfection. It sometim [illegible] local inflammation is not confined to the boil its t spreads to the surrounding tissue; the whole region is swollen and painful, and occasionally develops subcutaneous abscesses, and sometimes the absorbent vessels become inflamed, and the inflammation is propagated to the lymphatic glands, producing swelling, and sometimes suppuration of those organs. Enlarged lymphatic glands in the groin from boils on the buttock or pudendum, are not uncommon; and enlarged axillary glands, from boils on the hand or wrist, or in the armpit itself, are comparatively frequent.

Furunculus is commonly accompanied with constitutional symptoms of a very slight description; but sometimes, when the pain is very intense and prolonged, the feverish symptoms run sufficiently high to call for antiphlogistic treatment. The pulse may be quickened; there may be pain and tightness of the head; thirst; dryness of the tongue; languor and restlessness; and the secretions may be deficient in quantity or arrested; added to which, when the pain is excessive, or when the boil is developed in the meatus auris, there may be delirium.

HORDEOLUM.

Syn. *Phyma hordeolum; stigh; stithe; stihan;*[1] *stian; sty.*

HORDEOLUM, or sty, is a small boil occurring upon the edge of the eyelid, and involving a meibomian gland. In its progress it is indolent, coming slowly to maturity, and presenting at its summit a single purulent point, and sometimes two or three. It is attended with much pain, causes swelling, and sometimes œdema of the eyelids, and diminishes but slowly in size as it subsides, sometimes leaving behind it a chronic redness, which may last for several months. Commonly, hordeolum is single; sometimes two are met with on the same lid; sometimes one or more exist on both lids; and sometimes both eyes are affected at the same time.

ANTHRAX.

Syn. *Phyma anthrax; carbuncle.*

ANTHRAX, or carbuncle, is a hard, circumscribed, flattened tumor, very little raised above the level of the skin, but extending deeply (an inch or more) into the cutaneous tissue. It is red in color, the redness being more or less vivid or dark at first, often presenting a mahogany tint; then becoming more or less purple, then livid; and, after the separation of the sloughs and the healing of the skin, leaving behind it a chronic redness and deep-brown stain, which lasts for a considerable time. The pain of carbuncle is very severe, and of the throbbing and burning kind; the latter character having gained for it its twofold appellation of carbuncle and anthrax, carbuncle signifying a little coal, and anthrax that same coal efflorescent with fire. When it has attained its full size, and the surface is purple or livid, the ticle becomes raised into one or more blisters, numerous suppura points appear in the skin, and these suppurating points are succe by perforations, through which the core issues from the stra beneath in the form of sloughs, the sloughs being the fibrous tissu the derma, converted into a grayish and whitish pulp, more or soft and viscous, and mingled with an ichorous, purulent, and sanio discharge. Perforated all over its surface in this way, the face of th carbuncle has the appearance of a colander or sieve. Sometimes instead of numerous perforations, a portion of the skin of considerable size loses its vitality, and becomes converted into a black eschar, and the slough which follows is homogeneous and extensive. This is the *pruna*, or eschar carbuncle. At other times, and also as a consequence of the loss of vitality of a considerable portion of the centre of the carbuncle, the brownish or reddish-brown slough, isolated by suppuration from the surrounding living parts, broader at its base than its summit, and foliated on the sides by successive extension of the sphacelus, has somewhat of the appearance of the ripened cone or fruit of a fir-tree. This idea in the poetical mind of our forefathers gave origin to the name *terminthus* applied to this variety of carbuncle; terminthus being a mode of writing terebinthus, and referring to the turpentine-tree, the pinus abies.

---

[1] Stihan, a Saxon word signifying arising, springing up, or ascent. "To sty," as used by Spenser, means "to soar, to ascend," as in the following couplet:—

"To climb aloft and others to excel,
That was ambition and desire to *sty*."

Carbuncle, unlike boil, is generally single, and attains a considerable size; sometimes, when small, there may be several dispersed on various parts of the body. Commonly, the carbuncle varies from two to six or eight inches in diameter, and one inch to one and a half in depth; it is hard and dense to the touch, and feels as though it were imbedded in the skin. It is usually met with on the back of the neck, close to the occiput, or upon the back of the trunk. We have seen it frequently on the shoulder, the side of the trunk, or the loins; and less frequently on the limbs.

A large carbuncle is at all times a dangerous complaint, on account of the great pain which it occasions, the long continuance of that pain, the exhausting process requisite to separate the slough, and the irritative fever with which it is accompanied; added to all, is the fact of its very existence being due to enfeebled powers of constitution; but the danger of carbuncle is vastly increased by its occurrence on the nape of the neck, in which situation it is apt to excite erysipelas of a serious kind, and often to give rise to congestion of the brain, an event which is usually fatal.

Carbuncle is accompanied with more or less irritative fever and general disturbance of the nutritive, vascular, and nervous system. It occasions loss of appetite and loss of sleep; and when the pain is severe, the patient is not unfrequently delirious.

DIAGNOSIS.—The distinguishing characters of the furuncular eruption are, their hardness, redness, depth in the substance of the skin, pain, and, at a later period, the deeper tint of color which they acquire their perforation at the summit, the escape of so small and insignificant a quantity of pus, and the subsequent appearance of the core or slough. Hordeolum, moreover, is known by its seat of development. The special characters which distinguish furunculus and anthrax, at the first appearance of the latter, are the conical shape of furunculus, and the flatness of surface and greater depth of base of carbuncle; at a later period, bulk, number of cores, tendency to suppurate imperfectly in furunculus and slough in carbuncle, are superadded as further distinguishing features. The mutual relations and resemblances of the two diseases are also exhibited in the name which has been given to the smaller carbuncles, when only three or four cores exist, namely, furunculus anthracoides.

CAUSE.—In referring to the books of our fathers of a few years back, we might be led to infer that boils were a proof of exuberant health, that they were indicative only of the most exalted powers of constitution, and that the *plague of boils* was one of the most desirable events that could happen to youth and manhood. "The boil," says Mason Good, "is found in persons of an entonic or phlogotic habit, with a peculiar susceptibility of irritation;" therefore, he continues, this tumor is "chiefly found in persons of high health and in the vigor of youth." At the present day, however, this is certainly not the fact, for we see boils associated with debility in every degree; we are, therefore, driven to the conclusion, that either the human constitution must have undergone a change since the time of our ancestors, or that altered atmospheric conditions have induced an alteration in the diseases of man. Probably both of these propositions are true; for, with regard to the first, we know that the free use of the lancet which was made by our predecessors could not be tolerated at the present time; and with regard to the latter, we are aware that diseases of dyscrasia have increased of late years, and go on increasing; and that the general tendency of disease is to assume a low and asthenic form.

During the last ten or twelve years, and particularly during the first half of this period, there existed, and still continues to exist in a less degree, an epidemic of boils; they afflict persons of both sexes, of all ages, and at all seasons of the year, but we have never seen them occur in any one possessing genuine good health; there is always mal-assimilation, often cachexia, and frequently the boils are associated with other forms of cutaneous disease, such as eczema or acne. In this so-called furuncular epidemic the boils are for the most part small, and they have a frequent tendency to put on that form which is termed *furunculus anthracoides*, many of them having the character of small carbuncles rather than boils. They are also not unfrequently associated with the phyma or *push*, a small cutaneous phlegmon terminating in abscess; and sometimes large collections of pus are formed in the neighborhood of the boils, as when they occur in the axilla or in the labium pudendi.

The anthrax or carbuncle is a disease of the latter half of life, and of a debilitated constitution, being always associated with cachexia, and frequently with the gouty diathesis. This has always appeared to us to be the active cause of that monster carbuncle which is form upon the back of the neck; and the cerebral congestion

congestion, allied to the gout
winter of 1855–56, as almo
John Hunter remarks th
good living, and almost e
and that he never saw but o
true at the time he wrote:
to the selection of cases f
opposed to our own exp
carbuncle in the parish workhou
who were strictly abstemio
only excess was in mental p
deterioration and debility

abundant, is not dangerou
general powers is sure to get we
occurs in a debilitated and e
is developed on the occiput an

Furunculi are diseases of debilit
sometimes nervous, but more frequentl
debility. They therefore deman
constitution and to the part; in oth
treatment.
must have for its object, to regulate th
secretions, to remove any special excitin
and to corroborate generally. To th
efficient purgatives, followed by bitte
with sulphuric acid, quinine, and chal

necessarily constitute an important part
meals should be regular, and consist
generous without excess, and adapte
digestion, and degree of exercise
sterling requirements are, good an
of the skin of the whole body with co
amount of exercise, avoiding exhaustic
so powerfully to the production
considerations. The stifling and impu
the office or house, and an unwashed ski
for the generation and growth of boils ar

is brewers' yeast; an ounce taken thr
the furuncular diathesis. We have nev
trial, as we have never found these eruptio
directed; and we cannot discover th
the remedy. It can supply neither air n
we should prefer the brew to the froth.
treatment of furuncles is of considerable importance; an
consider them in their three stages, of origin, maturatio
In the first stage our efforts should aim at retardin

them; in the *second* stage we must help the suppurating process, and relieve the pain caused by pressure on surrounding tissues; in the *third* stage we must assist nature to cast off the dead matter, and heal the ulcers which they have occasioned. Our local treatment is consequently, ectrotic, palliative, and healing.

The *ectrotic* treatment is best effected by the application of a circular piece of the galbanum and opium plaster spread on wash leather; or by pencilling with liquor plumbi subacetatis; a solution of nitrate of silver; or the compound tincture of iodine. The plaster supports the congested tissues, excludes the atmosphere, maintains an equable temperature, is sedative in its operation, and commonly renders further treatment unnecessary. When the plaster cannot be employed, or where objections arise to its use, the other remedies may be put in practice, the liquor plumbi should be applied every six or twelve hours with a camel's hair brush, leaving it to dry on the surface. The solution of nitrate of silver, of the strength of ten to twenty grains to the ounce of nitric ether, should also be applied by means of a camel's hair brush, and repeated if no blister be formed, or if the furuncle seem disposed to subside; and the compound tincture of iodine may be used in a similar manner.

The *palliative* treatment supposes the failure of the ectrotic treatment to check the progress of the tumor. We must then soothe by warmth and moisture, and assist in the promotion of suppuration. Under these circumstances we shall still find our best remedy to be the galbanum and opium plaster, slashed in the middle by two or three vertical slits, so as to give passage to the pus when it shall have formed. In the majority of instances no further treatment will be required; but if, in spite of this application, the pain continue or increase, we may be driven to have recourse to a very soothing but at the same time a very bad remedy—fomentation, water compress, or poultice. Fomentation and compress are better than a poultice, because at any moment they can be suspended. The poultices the best suited for the purpose are those of linseed meal, of carrots, or the yeast poultice; and we recommend that, whichever be employed, the skin should be protected with a dressing of lint spread with the unguentum resinæ, previously applied. When the poultice is used, it must be changed every six hours, so that the heat may be kept up to a pretty regular standard, and no check to suppuration allowed to intervene.

The objection to the poultice, to confined moisture and warmth, is, that it tends to soften and weaken the already debilitated skin, and to render it liable to the subsequent invasion of a crop of smaller boils or ecthymatous pustules. This we must obviate as much as possible, by limiting the extent of the poultice, by washing the circumference of the furuncle with tepid water and soap, and especially with the juniper tar soap, whenever we remove the poultice; by sponging it with spirits of camphor, or the juniper tar lotion, and by dressing it, as previously directed, with the unguentum resinæ.

The *healing* treatment is stimulant or tonic in its intention: the galbanum and opium plaster will often effect the purpose further aid; or, if the sore need the assistance of a digestive such as the unguentum resinæ, the plaster will be found the most convenient means of keeping the latter in its proper place; or, if the treatment by plaster be rejected, the skin around the furuncle should be kept dry, it should be cleaned by means of the juniper tar soap, and anointed with the unguentum resinæ flavæ, while the broken summit should be dressed with a pledget of lint spread with the same ointment; the dressings being kept in position either by strips of adhesive plaster or by a light bandage.

Viewed according to these indications, we can understand the value and proper time for application of various popular and domestic remedies which have a reputation in the treatment of boils; for example, the split fig, the honey poultice, and the cobblers' wax plaster. The honey poultice consists of half an ounce of honey and the same quantity of melted lard, with the yelk of an egg, well mixed together, and inspissated to the proper degree by the addition of flour. The cobblers' wax plaster is to be regarded as a digestive remedy of a somewhat active kind, suited only to the coarse skins and coarser bodies of the rural population by whom it is employed. Turner observes that "the common people apply shoemakers' wax, a very uneasy application upon so tender a part;" and he continues, "melilot emplaster, or basilicon, used by others, are much preferable, which both suppurate and often heal." Among the remedies in use in his time were a poultice made by boiling figs in milk, the lily root boiled in milk, and linseed boiled in milk; these applications were frequently mixed together and used in combination.

Daniel Turner gives the following admirable account of his treatment of a furuncle, the "largest bile" he had ever seen: "When it was arrived to a cone, and I perceived the matter made, I passed in a lancet, and discharged a considerable quantity of well-concocted pus, under which, after two or three days' time, I found a large cone or slough, extending, under the lips, the whole compass of the tumor; to come at which I was under necessity to dilate both upwards and downwards; then, filling up the ulcer with præcipitatum rubrum, and a pledget with basilicon over all, I dressed him up, and left this dressing on for two days; after removing which there came out therewith about one-half of the said slough. I continued this way of dressing till the ulcer was *mundified*, and being *incarned* with a mixture of the same basilicon and precipitate, *cicatrized* with dry lint and my ceratum de lapide calaminare; more examples I think needless."[1]

When a boil or small carbuncle can be conducted to its cure without the aid of the lancet or of the knife, it will always be an event most satisfactory to the patient; but not unfrequently with anthrax, the necessity arises for the use of the knife; and therefore we must consider what the circumstances are which render an incision necessary, and, secondly, in what manner it should be practised. The conditions urging the incision of furuncles are, extreme pain, inconvenient [illegible] and great hardness and depth, implying a disposition to spread. The first and the last of these conditions represent the chief dangers of the disease. The pain injures the health, and a considerable increase in the extent and depth of the mischief increases the pain, and consequently the danger of the patient. Pain is the consequence of the enlargement of the boil; and the enlargement is due to a double cause, namely, congestion of its bloodvessels and infiltration into its tissues. Now, an incision made through the entire thickness of the boil or carbuncle empties the vessels and tissues, reduces the volume of the tumor, and immediately relieves tension and pain. Moreover it prevents the extension of gangrene in the tissues; it brings the disease to a more speedy conclusion, and it saves the general health and constitution.

---

[1] De Morbis Cutaneis: A treatise of diseases incident to the skin. Fourth Edition, [illegible]

When, therefore, it shall be decided that an incision is indispensable, the question will arise as to the number of incisions necessary. In our own practice we have always given a preference to a single incision, carried through the whole extent of the tumor, and in a direction the best suited to facilitate the escape of discharges from the wound. Other surgeons prefer a crucial incision, that is, two incisions in place of one, as calculated to give a greater degree of freedom to the discharges; and a French surgeon, founding his theory on the known greater degree of sensitiveness of the skin than of other tissues, has proposed a subcutaneons crucial incision. When a carbuncle is freely incised, the surface of the section is seen to be studded all over with the yellow and gray spots of the pus and sloughs; and the substance of the hypertrophied derma looks spongy and worm-eaten; sometimes large sloughs are brought into view, and a free exit is established for the stagnated blood and the pent-up collections of pus and dead fibrous tissue. In debilitated and worn-out constitutions the loss of blood which follows the section of a carbuncle may be supposed to increase the exhaustion of the patient, but that is really not the case unless the hemorrhage be excessive. It is surprising how much blood may be lost without inconvenience to the patient, the loss being compensated by the relief from pain and suffering which immediately succeeds the operation. Added to the other advantages which result from the treatment of carbuncle by incision is the saving of the skin from destruction by sloughing, a matter of importance in connection with the healing of the ulcer; for, where much integument is lost, the cure of the ulcer is slow and protracted, and the cicatrix imperfect and unsightly.

In the practice of incisions in cases of carbuncle, we may avail ourselves of chloroform, or of the numbness occasioned by congelation, according to the plan of Dr. James Arnott, or the more elegant process of ether spray discovered by Dr. Richardson.

Another method that has been advocated from time to time is the destruction of the central part of the carbuncle with potassa fusa. The advantages proposed by this method are, that it is less painful than incision practised from the surface and without the use of anæsthetic agents; and that it saves a loss of blood which the patient is supposed to be ill able to bear. In certain chronic and irritable forr of furuncle, and especially those of the anthracoid character, we c affirm the value of the potassa fusa in cutting short the morbid inflammation.

After the operation, in whatever way it be performed, the wound should be dressed with pledgets of lint spread with the unguentum resinæ, and covered with a linseed-meal or carrot or yeast poultice; and for reasons stated above, the sooner the poultices can be dispensed with the better.

It is a question of no insignificant inportance whether incision may not be altogether avoided in the treatment of carbuncle; and whether better and safer results may not be obtained through the agency of compression. We have seen many instances in which this treatment has proved unusually successful, and we are ready to give all our support to the extension of the principle. The agent of compression is a plaster of soap and opium, or galbanum and opium, spread upon any convenient material; the best, as we believe, being wash leather. And the manner of compression may be left to the judgment and ingenuity of the operator. One may prefer to dispose it in concentric circles, beginning at the circumference of the tumor, and rising gradually to its summit; and others may prefer strips attached on either side, and drawn together across the tumor as proposed by Dr. Smyly.[1] Dr. Smyly and Mr. Collis both speak in high praise of the treatment, and have adopted it as their common practice. Sometimes it may be sufficient to cover the whole tumor with a circular piece, slashed in the middle; and in a few instances we have availed ourselves of the contractile property of collodion to produce the necessary compression previously to applying the plaster.

Celsus, who gives the following description of carbuncle, advocates the use of actual cautery in its treatment; "it is red at first, but afterwards livid; it is dense, hard, and solid, and spreads by its base more or less quickly. It is covered with vesications, which are but slightly raised, black, or more or less livid, in correspondence with the color of the sanies which they contain; the surface beneath them being almost black. The treatment of carbuncle is, the application of the actual cautery; and the subsequent management of the case, such as is adapted for an ordinary burn."

The treatment of hordeolum should be the same as that of furunculus; cooling lotions to subdue heat and inflammation during the first stage; warm fomentations and poultices to encourage suppuration as soon as the first period is past; stimulants, such as the unguentum hydrargyri nitratis diluted, to disperse any swelling or induration that may be left after the matter is evacuated, and restore the part to its normal state. Constitutional treatment should not be neglected, the principle of treatment being the same as that for boils.

---

[1] Dublin Quarterly Journal, vol. xxxvii. p. 280.

PUSTULA MALIGNA.

Syn. *Anthracion; ignis persicus; pustula gangrænosa; charbon maligne.*

PUSTULA MALIGNA is a kind of boil, attended with gangrene and phlegmonous erysipelas, originating from contact with putrid animal matter, and sometimes idiopathic. It occurs for the most part on regions of the body exposed to the operation of such causes, for example, the face, neck, hands and arms, and feet and legs; and, according to Rayer, presents three degrees of severity: namely, mild and transient; grave, from extension of gangrene and phlegmonous erysipelas; and dangerous, from disorganization of the blood, internal gangrene, and pyæmia.

It begins as a vesication raised upon an inflamed spot of small extent, and containing a sanguinolent fluid. In the centre of the inflamed spot a gangrenous disk soon becomes apparent; and around the disk is an areola of a deep red color, and more or less swollen. In the mildest form of the disease the centre becomes a black eschar, and the areola is limited to a small extent. In the more grave form the gangrenous centre is larger, and the inflamed tissues around it take on the character of phlegmonous erysipelas, often considerably swollen, often puffy and emphysematous, and sometimes spreading extensively, for example, from the eyelid to the scalp and face, or from the face to the neck and thorax; while in the most dangerous form of all the local inflammation is least apparent, but the constitutional symptoms are serious. In all the forms the swelling and infiltration are deep, and the tissues dense and hard.

The period of incubation of the poison ranges from a few hours to several days, and the local phenomena run on with considerable speed; vesication is produced in twenty-four hours, and gangrene follows in another day. The constitutional symptoms may be slight, or they may assume the type of irritative fever or typhus, especially in the constitutional form of the disease. In the latter case the pulse is small and quick, the tongue brown and dry, and there is more or less delirium.

The *diagnosis* of the malignant or gangrenous pustule or boil is to be found in the early vesication of the inflamed spot, the gangrenous eschar in its centre, and the inflammation of a phlegmono-erysipelatous type in the circumference.

The *cause* of malignant pustule is the inoculation of a virus engendered in putrid animal matter, as for example in the hides of beasts; and as a consequence, the boil is most commonly met with among butchers, hide dressers, and crafts exposed to the contact of decomposing animal substances. Sometimes it is of idiopathic origin, and is endemic in certain countries, as in Burgundy, where it has received the name of *charbon maligne de Bourgogne;* and it has also been seen in Germany associated with intermittent fever and the malarious cachexia, occurring for the most part in the summer season. The regions of the body chiefly attacked were the face and neck; and in the latter situation it was frequently fatal, from the extens phlegmonous erysipelas to the deeper-seated parts.

The *prognosis* of malignant pustule is more or less favorat cording to its degree or extent. The simplest form is not dan while that of a constitutional kind is commonly fatal from t from pyæmia, or from gangrene of the alimentary canal or puln organs.

Treatment.—The local treatment of malignant pustule sho the application of a strong solution of potassa fusa, so as to pe the morbid tissues to a considerable extent; and then the appl of a dressing of basilicon. While internally, the chalybeate trea so valuable in erysipelas, is indicated, together with a generou

PUSTULA ALEPPENSIS.

Syn. *Pustule d'Alep; pustule de Bussorah; bouton d'Alep; bouton de Bagdad*, *d'un an; habbet el seneh*, Arab; *pyrophlyctis endemica*, Alibert; *Aleppo pu* *ulcer.*

The Aleppo pustule and ulcer is a disease endemic to the tries watered by the Euphrates and Tigris, and is especially fr in occurrence in Aleppo, Bagdad, and Bussorah. In Aleppo it with at all ages after the first years of infancy, every native suf attack sooner or later, and strangers, after a residence of a few or months, are also liable to its invasion. It is remarkable, that of universal occurrence in Aleppo, it is unknown in neigh towns, showing a strictly endemical character. It is also rema for its slow progress, hence its synonym, "the ulcer of a year;" occurrence but once in a lifetime; for its eruption on the f natives of the country, while in strangers it prefers the limbs; a its development in those who have resided or passed a short within its endemic range, after they had left the country. A remarks that a man, who had resided for two-thirds of his Bagdad without eruption of any kind, came to live in Paris, the latter city was attacked with Aleppo pustule. The disease contagious; but leaves behind it an indelible cicatrix, which Syrians is the especial mark of an Aleppian, and is often a s deformity.

The disease begins as a slightly elevated pustule of small siz rounded by a little redness; the raised cuticle exfoliates from ti time, and the gathering goes on steadily, sometimes with a littl ritus, but without pain. At the end of four or five months reached the size of half an inch or one or two inches, has b elevated to the extent of a quarter of an inch, is painful, and co by a whitish or grayish crust. When the crust breaks, or is pa separated, a purulent fluid exudes; and if the crust be remove surface presents the appearance of a granulating ulcer. The disc of pus is more or less active, sometimes pale, sometimes dark-co and sometimes fetid; it escapes around the edges of the cr through breaks on its surface; but after a while, in another t three months, the quantity of secretion diminishes, the scab be drier, darker colored, and more imbedded in the skin; when the scab falls it is replaced by one which is thinner, until at the expiration of twelve months, more or less, a thin dry scale of epidermis is all that remains, partially concealing from view a depressed cicatrix of a deep red color, becoming lighter in tint with time, and finally white.

The Aleppo ulcer is sometimes solitary, when it is distinguished as a *male* pustule; but often the chief pustule is surrounded by a cluster of smaller ones, or there may be several chief pustules and many of minor size, in which case the eruption is termed *female*. Rayer narrates that Guilhou saw a Frenchman who was afflicted with seventy-eight principal pustules, each surrounded with its smaller satellites, so as to resemble an eruption of smallpox. It may occur on any part of the body, but in natives is most frequent in the face, always leaving behind it a deep and ugly scar, and often producing considerable deformity; removing, for example, part of the eyelid, the ala of the nose, part of the lips, or of the ear, and causing not only loss of substance, but obliquity of the features from contraction.

The Aleppo ulcer is unaccompanied by constitutional symptoms, and is never fatal; but, nevertheless, is the cause of serious deformity from the destruction of the derma to a considerable depth. It is painless and insidious in its origin; but often painful in its course, the pain being greatest when it attacks the skin in the neighborhood of a joint. It is probably of malarious origin, to which impurity of water may essentially contribute; but, as we have seen in the case mentioned by Alibert, the cause of the disease, whatever it may be, has the power of creating a diathesis, and the disease may manifest itself at a distant period, and in a distant country. We have noticed this same phenomenon in the history of the Elephantiasis of the Greeks. Although denominated "the ulcer of a year," the disease is often of several years' duration.

Among the authors who have given a description of the Aleppo pustule from personal observation, are Russell, Volney, Bo, Alibert, Dissant, and Guilhou.

The treatment of the disease has received little satisfactory illustration. Local remedies in general are thought to aggravate it; and it is deemed most desirable to allow it to pursue an uninterrupted course. Actual cautery has its advocates; but we should be more inclined to seek for an internal remedy that would remove the effects of the malaria and correct the diathesis; for example, quinine, or quinine and steel, and possibly arsenic.

CHAPTER IX.

NERVOUS AFFECTIONS.

NERVOUS AFFECTIONS of the skin are distinguished by alteratio the natural sensibility of the organ, such alteration having its sea the nervous system, and especially in that portion of the nervous tem which enters into the composition of the nervous plexuses o integument. The alteration may be one of *augmentation* of sensibi as in the state termed hyperæsthesia; or *diminution* of sensib as in anæsthesia; or it may be one of *perversion* of sensibility, pruritus. In these altered states of sensibility of the skin, there be no change of its appearance, as in pruritus; or it may assu morbid condition of structure, as in the disease termed prurigo.

The diseases composing this group are four in number, as follow

Hyperæsthesia,
Anæsthesia,
Pruritus,
Prurigo.

HYPERÆSTHESIA, or augmented sensibility of skin, is some idiopathic, and apparently independent of any other kind of ner disorders; and at other times is associated with a tendency to ne gia, or with some different form of nervous affection, such as hys Its symptoms are a state of sensitiveness raised to so high a pitch the slightest pressure on the skin is painful; the patient is unab bear his clothes; the vibrations of the hours, even sounds, prod painful sensation, and he is prevented from lying in a natural po from intolerance of the pressure occasioned by the weight of his body. We know a lady who for weeks was incapable of lying in from tenderness of her skin, without any disease of the organ b present; and another in whom the scratching of a pen in wr seemed to trace its course in fire upon her brain. A gentlem highly nervous temperament complained of certain sounds produ an acid feeling in his skin; while the touch of iron, as in han the poker, gives him a metallic taste in his mouth. Another ge man, when out of health, becomes painfully aware of the existen two independent sides of his body; and in illness cannot bear to one side even so much as looked upon.

ANÆSTHESIA is a loss of sensation of the skin, more or less plete. The white discolorations of morphæa alba are anæsthetic so also, but in a less degree, are the bald patches of alopecia a Anæsthesia is known to accompany elephantiasis and distinguis of its forms, elephantiasis anæsthetica; one of the early signs of disorder noticed by the patient, is a loss of sensation of the skin gentleman from Mauritius, who consulted us for this disease, to that his attention was drawn to it in the first instance by accide uring boiling water on his arm, and finding that it produced no nsation.

PRURITUS is a state of itching of the skin, without any cause being pparent in the organ itself; there is no redness, no alteration of surace, nothing, in fact, that the eye can detect as a disease. Pruritus s often associated with the eczematous diathesis, and may occur upon ne part of the body, while indications of eczema are present on anther; or it may happen in a person who at some other time of his life has been the subject of eczema. Pruritus is also very commonly a reflex nervous phenomenon, or is sympathetic of some distant source f irritation, such as intestinal worms or hæmorrhoids.

The sympathetic excitation of pruritus indicates its nervous character, which is also manifested by the manner of its attack; coming on suddenly, raging with violent fierceness, sometimes periodic, and subsiding for a while totally.

Pruritus is occasionally *general,* but more frequently *local.* When general, it may attack by turn every part of the body; sometimes it is the consequence of neglect of proper attention to the skin, and at others is due to nervous irritation, originating probably in a state of disorder of the mucous membrane of the alimentary canal. In a case of the latter kind, the patient is apt to believe himself infested with insects, which he feels running about upon his skin from place to place.

In local pruritus the parts of the body on which the itching is most troublesome are its apertures, those in which the skin is continuous with the mucous membrane; for example, the eyelids, the nares, and especially the anus, the pudendum, and the prepuce. But pruritus also attacks other regions, such as the scalp and the scrotum. We know a young lady who, in consequence of the existence of pruritus of the edges of the eyelids, pulled out all her eyelashes; another plucked the hair from the top of the forehead; and a lady of a certain age had the hairs of the head plucked out twice a week, the operation to her feelings being one of intense enjoyment. Pruritus of the nostrils is a known concomitant of intestinal worms, and so also is pruritus ani.

The *local* forms of pruritus deserving of special attention are:—

Pruritus ani,
" scroti,
" præputii,
Pruritis urethræ,
" pudendalis.

PRURITIS ANI is often intensely severe and troublesome; indeed is sometimes almost unbearable, and creates a state of excitement of the whole nervous system. Children suffering from ascarides are often tormented with this itching. In adults the cause more commonly is hæmorrhoids and eczema. The sufferers tear the part with their nails, create a serous discharge, and then an eczema is developed. The point of greatest irritation is the line of union of the skin and mucous membrane.

PRURITUS SCROTI is especially eczematous in the character of its itching, but may sometimes exist independently. When the skin is much scratched and torn by the nails, it takes on the characters of eczema. It is often of considerable duration, lasting for months, or returning from time to time for several years. A case at present under our treatment has continued for five years.

PRURITUS PRÆPUTII is also more frequently dependent on the eczematous diathesis than upon a special cause, although, from its position the disease is very apt to sympathize with irritation of the genito-urinary apparatus. Hence itching of the prepuce and meatus urinarius is one of the symptoms of calculus of the bladder.

PRURITUS URETHRÆ is a troublesome irritation that belongs especially to females, and gives rise to great discomfort and annoyance. It appears to be sympathetic with irritation of the mucous membrane of the bladder and urethra.

PRURITUS PUDENDI is among the most annoying and vexatious of the disorders of the female sex; it may exist at all ages, but is most frequent at the mid-period and at the decline of life. In children it is generally sympathetic with ascarides, or some irritation of the mucous membrane of the vulva. At a later period it may result from nervous excitation accompanying the development of menstruation, and is sometimes associated with amenorrhœa. Again, it may be sympathetic with pregnancy or uterine irritation, or depend upon varicose veins of the vagina. It is variable in the extent of surface attacked, sometimes being limited to the mucous surface of the labia; sometimes involving besides the tuberculum urethræ and the margin of the vagina: sometimes the præputium clitoridis, and nymphæ; and sometimes extending for an inch or more into the canal of the vagina. When it attacks the cutaneous surface of the labia, it is generally due to eczema; and is a disorder usually of long duration, lasting for months, and sometimes for years.

DIAGNOSIS.—The pathognomonic characters of pruritus are itching without apparent alteration of structure of the skin.

CAUSE.—The cause of pruritus is a reflex nervous action, excited by irritation, commonly of some part of the mucous membrane; for example, the alimentary mucous membrane, and especially the uterine mucous membrane. In a case lately under our care there existed considerable derangement of stomach, accompanied with gastrodynia, and frequent attacks of vomiting. Pruritus also accompanies pregnancy, ascarides, disease of the liver accompanied with arrest of function, and jaundice. The predisposing cause is debility, which may be assimilative, nervous, or local; and the more common of the remote predisposing causes are deranged digestion, rheumatic and gouty diathesis, abuse of alcoholic drinks, &c. A sordid and ill-nourished state of the skin is not unfrequent as a local cause.

PROGNOSIS.—Pruritus is nowise dangerous, but frequently very obstinate, and as a daily annoyance is often more unbearable than a more serious complaint. In nine cases, the duration of the disorder ranged from one month to six months in five, and from one year to five years in the remaining four.

TREATMENT.—The treatment of pruritus must be directed to the constitutional cause, and especially to the exciting cause. Where the latter is obvious our treatment is self-evident; where it is obscure we must endeavor to improve assimilation and strengthen the health generally. In obstinate cases, we shall find arsenic of great value as a neuro-tonic, an assimilative tonic, and a special cutaneous tonic.

The *local* treatment must have for its object the restoration of the tone and healthy function of the skin, and the employment of antipruritic remedies. With the former view, we shall find cold ablutions with juniper-tar or carbolic acid soap of much service; exposure of the skin to the atmosphere; and the use of light articles of clothing. A gentle sweat in the Turkish bath at a moderate temperature (130°), followed by shampooing and a tepid or cold douche, will do much to restore the tone and vigor of the skin. When the seat of pruritus is limited and more under our command, we must have recourse to thorough washings with the juniper-tar or carbolic acid soap and cold water preparatory to the application of other remedies.

Our best antipruritic remedies are the pyroligneous oil of juniper in its pure state in severe cases, and more or less diluted in milder ones. Hydrocyanic acid in emulsion of bitter almonds; the bichloride of mercury in emulsion of bitter almonds; lotions of the sesquicarbonate of ammonia, or superacetate of lead; a lotion of tincture of aconite, one part to three; a lotion of carbolic acid; sponging with hot water, &c. These remedies must be applied to the irritable parts several times in the day.

In pruritus capitis a pomade containing one part of the nitric oxide of mercury ointment to three of benzoated lard is a good application; in pruritus palpebrarum a diluted ointment of the nitrate of mercury, is the best that can be used; while in pruritus scroti, pudendi, and ani, the best kind of ointment is that of the pyroligneous oil of juniper. It is necessary, however, to have a variety of remedies of this kind at hand, in order to change them from time to time, or substitute one for the other, in case the first prescribed does not answer the purpose. In very obstinate cases we may employ a lotion or ointment of creasote, aconite, or cyanide of potassium.

In pruritus pudendi Trousseau praises the effects of injections as warm as the patient can bear; he remarks that he has seen great benefit result from the injection of hot water simply; and that the solution of bichloride of mercury used hot has proved successful after years of unavailing attempts with other remedies. Lisfranc recommends that in cases where the pruritus bears relation to the menstrual periods, several small bleedings should be practised successively; and these, after a few repetitions, he never found to fail. He also advises nitrate of silver in the form of lotion and injection. The juniper-tar ointment considerably diluted is a valuable remedy in these cases; as also is the juniper-tar and carbolic acid soap.

PRURIGO.

Syn. *Exormia prurigo*, Mason Good; *Juckblattern*, *Juckblätterchen*, Germ.

PRURIGO is an affection of a more deeply-seated position, and more inveterate character than pruritus, and is usually co[illegible] to the aged, but may exist at any period of life. It is not only a state of aggravated pruritus, but it also involves an alteration of the structure of the skin, which is hard, uneven, discolored, and unhealthy, both in appearance and function.

The itching of prurigo is a combination of all the vexatious modifications of pruritus, consisting of itching, tingling, creeping, pricking, burning, piercing, &c. The act of rubbing or scratching seems to spread and aggravate these sensations, until they become unbearable, and create an excitement throughout the whole nervous system, rising sometimes to a state of frenzy. These morbid sensations occur on all parts of the skin, but seem to be concentrated for the time in the part where the symptoms are present. They are intermittent, ceasing entirely for a while, and then returning with unabated force; and are influenced to a very considerable extent by changes of temperature and by mental emotion. Thus they are brought on by the chill which accompanies the removal of the clothing; by the warmth of bed; and especially by the direction of the thoughts to the evil.

These sensations are associated with an unhealthy appearance of the skin, which is grayish and yellowish in color; dry; often resembling parchment rather than living skin; sordid; condensed; uneven; and roughened by pimples, resulting from the elevation of the pores. Moreover, to these signs of the disease, we must add emaciation of the person and general wrinkling of the skin. The itching gives rise to a state of spasmus perihericus to a greater or less degree; and its unevenness and papular condition are thereby increased.

For the relief of the itching, scratching with the nails is irresistible; and then a new series of signs are added to the above: the heads of the papules, caused by the erection of the pores, are torn off and bleed, and when they cease to bleed, are surmounted with little black scabs of desiccated blood; and the nails leave their traces on the skin in the shape of long excoriated lines, which present various degrees of freshness; some being recently made and red, others partially crusted, and others again brown and fading; and not uncommonly with all these pathological appearances, there is also a sprinkling of the wheals of urticaria, resulting from the spasmus periphericus previously indicated.

To sum up the signs of prurigo, we must therefore note: pruritus of a severe kind and intermittent; a yellowish-gray color; small black scabs, intermingled with the red and brown lines produced by scratching; and a generally unhealthy appearance of the skin, which is dry, uneven, sometimes roughened by indistinct pimples, hard, and resembling the surface of leather. Where the skin has been neglected, we may add to these signs a sordid condition, consisting of sebaceous concretions on the surface, partial desquamation, and impaction of the sebiferous ducts with epithelial exuviæ and sebaceous matter.

Willan makes of prurigo one of the members of his order Papulæ; but it will be seen that the presence of pimples is an accidental character; there is nothing that deserves the appellation *papule* until the pruritus begins; and often, until the nails have been energetically applied; whereas the painful state of the cutaneous nervous plexuses is in reality the primary and most important sign, and the very essence of the disease.

The VARIETIES of prurigo are two in number, namely—

Prurigo vulgaris, Prurigo senilis.

We have formerly admitted, with Willan, prurigo mitis, prurigo formicans, and several local forms; but with our present views, we should refer prurigo mitis to lichen, under the name of lichen pruriginosus; prurigo formicans to prurigo senilis, for the modification of sensation implied by the word "formicans" is clearly not such as to entitle it to separate consideration; and the local forms to pruritus.

PRURIGO VULGARIS embraces the mildest form of the series of symptoms described under our general head. This modification is less the result of any difference in the nature of the disease, than in the circumstance of its occurrence in the young or in the adult, and in persons who are not so exhausted as in the latter periods of life.

PRURIGO SENILIS involves the most severe of the series of symptoms already detailed. It is a disease of the aged, and orignates in the cacochymia and cacotrophia common to that period of life, the symptoms being exaggerated in proportion to the nervous irritability of the patient. It is no dependence of dirt and neglect, but occurs often in the most cleanly, and in every rank of life. The painful sensations accompanying this disease have been sometimes compared to the gnawing of ants; hence one of the names applied to the disease, namely, prurigo formicans; but it is clear that this distinction is more applicable to the imagination of the patient than it is to the disease itself. An abbé suffering from this complaint, finds his illustration in martyrdom, in the "gril de St. Laurent;" while a soldier compares his pain to being pierced all over with halberds.

DIAGNOSIS.—The diagnosis of prurigo is a severe itching of the skin, associated with altered structure and appearance; the presence of small black scabs, and the traces left by scratching. In the absence of signs of altered structure of the skin, the case is one of pruritus. When there is itching, with papulæ, and the absence of alteration of structure just referred to, the disease is lichen pruriginosus; and when there is erythema, desquamation, and exudation, the diagnosis is eczema. It may be remarked, however, that we have sometimes seen prurigo combined with eczema.

CAUSE.—The cause of prurigo is debility, commonly nervous debility; and the lowered tone of the peripheral plexuses permits of that degradation of nutrition and innervation in the skin which occurs in this painful disorder.

PROGNOSIS.—Prurigo is always stubborn, and generally grave when it occurs in elderly persons, on account of the severity of the suffering with which it is associated, and the exhaustion accompanying that state.

TREATMENT.—Our treatment must be constitutional as well as local. The constitutional treatment should have for its object, to improve the tone of the system and increase the assimilative power; while the local treatment must be addressed to the alleviation of the local irritation and distress. The remedies recommended for pruritus are suitable to both these purposes; and to these we must add a generous and wholesome diet. Arsenic properly administered and watched, may be regarded as specific in prurigo. And we may accomplish much towards the restoration of a healthy condition of skin by ablutions with the juniper-tar and carbolic acid soap, frictions and manipulations with the hand after the manner of the shampooer, the tepid bath, the sweating bath used with discretion, and moderately stimulating local applications.

CHAPTER X.

VASCULAR AFFECTIONS.

THE VASCULAR AFFECTIONS of the skin constitute a small group, of which the characteristic feature is enlargement or hypertrophy of the bloodvessels. This hypertrophic condition of the bloodvessels commonly assumes a conglomerate form, and gives origin to a spot or mark, which is termed a *natural mark* or *nævus;* and the nævus may be *congenital*, that is, it may be present at birth; or it may be *accidental*, or, in other words, developed at any subsequent period of life. But sometimes the cutaneous vessels, and especially the veins, become enlarged and give rise to a straggling ramification, which is expressed by the term *hypertrophia venarum.* In nævus, the precise seat of the hypertrophy is the capillary plexus; sometimes the enlargement may belong to the arterial side of the vascular circle, at other times to the venous side. In the former case the spot will present the scarlet hue of arterial blood, in the latter the purple tint of venous blood; the one will be an *arterial*, the other a *venous*, nævus.

The VARIETIES of vascular affections present a primary division into congenital and accidental nævi, and hypertrophy of the cutaneous veins. The congenital nævi are arterial and venous; the accidental nævi, a spider-shaped mark termed nævus araneus; and a small hemispherical spot that resembles a drop of effused blood, nævus sanguineus. In a tabular form they may be arranged as follows:—

1. Nævi congenitales, { Nævus arteriosus, Nævus venosus.
2. Nævi accidentales, { Nævus araneus, Nævus sanguineus.
3. Hypertrophia venarum.

NÆVI VASCULOSI.

n. *Teleangiectasia; erectile tumors; nævus araneus; nævus flammeus; nævus sanguineus; Gefässmuttermäler*, Germ.; *signes; taches de vin*, Fran.; *mother's marks.*

Nævus vasculosus arteriosus, the vascular mother's mark, preents a bright arterial color, and is sometimes raised above the level f the skin, and sometimes almost flat. It is composed of a plexus of ninute bloodvessels or capillaries in a state of hypertrophy, covered y a very thin layer of corium, and has a spongy texture in the inerior. It differs in bulk in proportion to the distension of its vessels with blood; in a passive state being corrugated and more or less laccid, and in an active state smooth and distended, almost to burstng. This quality of the nævus of swelling under the influence of a nore active state of the circulation, has gained for it the name of *rectile tumor*, and in the same language, it is said to be composed of rectile tissue.

The vascular nævus offers some differences of figure and extent. The flat nævus is irregular in outline, uneven on the surface, and ometimes of considerable breadth. The elevated nævus is round or val in shape, of less considerable extent, and more or less smooth uperficially. The variety of shape of these tumors, their color, and heir prominence, associated with the fact of their being congenital, ave suggested a number of fables with regard to their origin, founded or the most part on the imagination. It is believed by the people hat they result from the mental influence of the mother operating pon the fœtus during pregnancy; that sometimes they proceed from nnatural longings, and at other times from violent mental emotion r fright. Hence the popular designation, *mothers' marks;* and hence lso the objects which they are supposed to represent. These objects ust, of course, be red in color, to correspond with that of the nævus; r example, fruit, such as currants, cherries, raspberries, strawberries, he boiled lobster, and blood. In the case of an infant afflicted with nævus of this description lately brought under our notice, the mother id that about the fourth month of her pregnancy she had an intense nging for some raspberries that she saw growing in a gentleman's arden, that she was unable to divest her mind of this impression uring the whole of the subsequent period of gestation, and that she as haunted with the dread lest her child should be marked. It is eedless to say that the longing had no share in the production of the ævus; but the coincidence of these longings and defects of structure f the child is sometimes very curious. The arterial vascular nævus ery frequently disappears gradually in course of time, especially hen the disorganization is not very deep or extensive; at other imes it enlarges and spreads, and is apt to give rise to considerable eformity of appearance, particularly when it has its seat upon the ce. The situations in which it most frequently occurs are the head nd the face, the shoulders, and the front of the trunk of the body.

Nævus vasculosus venosus.—The venous form of vascular nævus distinguished from the arterial nævus by its purple or livid color. his difference of color is due to a slower and more languid circulation through the vessels, which gives time to the blood to undergo its venous transformation; and under the influence of an exciting cause capable of increasing the rapidity of the circulation, the blood become redder and assumes a less purple character.

The venous vascular nævus, like the arterial nævus, may be eith flat or prominent, and present similar characters. The popular fanc sees in this form of nævus, fruits of a deep purple or black color, suc as blackberries and black currants, or the hue of the unboiled lobste and the longing of the mother is supposed to have taken that directio

When the nævus is superficial and but little raised, it is termed *claret stain* (nævus flammeus, Plenck), and may spread over a co siderable extent of surface, as the whole of one side of the face. The nævi sometimes occupy the eyelids, the ears, and the lips, and in tho situations are apt to swell to a considerable size, and produce mu deformity.

NÆVUS ARANEUS is an accidental form of the affection, and m appear at any period of life, being most common in children a women, and persons possessing a delicate and weak skin. It consis of a small globular prominence, from which several radiating vascul lines pass off around, like rays from a centre. The globular prom nence is an aneurismal loop of a minute artery, and the radiating lin are the veins which carry the blood away. At a short distance fro the central umbo they sink into the skin and are lost in its deep circulation. The peculiar shape of the nævus, a red centre, wi radiating lines, that might be compared to the legs of a spider, h suggested the name by which it is known, namely, *spider nævus.*

There is, however, another form of nævus araneus in which t venules communicate with each other at a short distance from t central boss, by means of a network of anastomoses, and give a differe character to the appearance of the spot. This we have distinguish as the *nævus araneus reticulatus;* in other respects it correspon exactly with the ordinary nævus araneus.

The nævus araneus is most commonly met with on the cheeks, ne the eyelids, and sometimes on the eyelids themselves. It is also see on other parts of the face, and occasionally on the neck and ches less frequently it is found upon different parts of the body where t skin is firmer and tougher.

NÆVUS SANGUINEUS is another form of accidental vascular spo occurring for the most part upon a discolored and unhealthy skin, th consequence of age or neglect. It resembles a small drop of bloo effused beneath the cuticle; is sometimes flat, but more commonl convex, and varies in color from a bright crimson to a purple o leaden tint. It is generally solitary; sometimes dispersed upon th skin, but never numerously. Its common seat is the breast, the neck, and the face, and it is not uncommon to find it associated with other indications of cacotrophia, for example, acrochordones or areolar warts, sebaceous concretions, and sometimes verrucæ.

Although the nævus sanguineus resembles a minute bleb of effused blood, it is in reality a varicose condition of a small tuft of capillar

nd in this respect conforms to the general type of structure
vasculosus.

TROPHIA VENARUM is a term applicable to enlargement of
te veins of the skin, vessels that in a normal condition of the
e imperceptible to the eye. Their enlargement is principally
eakness of tissue, but in a measure also to causes which give
struction in the current of the venous circulation. They are
chiefly on the face and lower extremities, but sometimes on
rts of the body, and are unaccompanied by any pain or in-
nce beyond the deformity of appearance which they neces-
casion.

face they are seen principally on the nose, the cheeks, and
; on the nose they are most conspicuous at the sides of the
at the tip of the organ. In these situations the venules some-
tain a considerable size; they are formed by the confluence
er venules derived from a plexus which occupies the fleshy
round the apertures of the nares, and proceed upwards in
lines to the upper border of the alar cartilage, where they dip
substance of the nose and join the veins of the Schneiderian
ne. On the sides of the bridge of the nose, and on the cheeks,
n a coarse plexus; and on the lower limbs, particularly the
hey constitute a superficial plexus of small extent, which is
color, nodulated and uneven on the surface, and gives a feel-
llowness and sponginess to the touch. It the latter situation
ty their blood into the subcutaneous veins, which are also
less varicose.

tate of hypertrophy of the venules, when it occurs upon the
ccompanied with more or less hypertrophy of the cutaneous
the skin has a coarse appearance, is thickened to a certain
nd in an advanced state of varicosity becomes generally en-
urple, and even livid. These phenomena occurring in the
duce swelling and enlargement of that organ; infiltration into
utaneous tissues takes place subsequently, and a foundation
r those huge lobulated noses which are occasionally met with
rld.

trophia venarum occurs only at the adult period of life, and
elderly persons, and commonly results from a lowered tone
. On the face and nose it is sometimes due to sedentary
r to exposure to inclemency of weather or climate; and on
r extremities is referable to retardation of the circulation
y a varicose state of the receiving venous trunks. We have
hypertrophia venarum nasi under treatment, that resulted
burn, from the scorching heat of the sun experienced in
the snowy passes of the Himalaya mountains; the intensity
ion from the snow producing at the same time an attack of
dness.

OSIS.—A prominence formed by bloodvessels in the substance
in is so easily distinguishable as to call for no special remark.
varieties of vascular nævus, with smooth and unbroken cuti-
)

cle, are not likely to be mistaken either for erythema or eczema, and the papulated and compressible elevations of nævus araneus and the smaller vascular nævi are wholly dissimilar to the solid papulæ of lichen or strophulus.

CAUSE.—The cause of nævi is essentially a weakness of tissue, combined with abnormal nutrition; in the instance of congenital nævi it is an abnormal growth centred in a part instead of distributed throug the entire organ. The minute aneurism constituting nævus araneu is commonly the result of muscular efforts which subject the vessel of the skin to sudden distension; such as coughing, sneezing, struggling, the forced muscular throes of labor, or inordinate efforts of an kind. Nævus sanguineus is a consequence of the want of a health and vigorous life in the skin. Hypertrophia venarum is commonl slow in its development, and results from exhaustion of tone of th vessels by frequent and excessive distension.

PROGNOSIS.—Unless in very extreme cases, either of excessive dept or breadth, nævus and hypertrophia venarum are removable by su gical means. They are very rarely of a fatal character.

TREATMENT.—The treatment of nævus is almost entirely local. I there be evidence of a weak and relaxed state of tissue, a constit tional treatment may be had recourse to, with a view of strengthenin the part through the whole; and in nævus sanguineus and hypertr phia venarum there may arise good reason for this practice.

The *local* treatment consists in the application of surgical mean which have for their object either the obliteration of the nævus; or i ablation, either by ligature or by the knife.

We have said that congenital vascular nævi often get well spont neously; the undue supply of blood requisite for their maintenance i apt to diminish, their vessels contract, gradual obliteration follow and nothing but the cicatrix remains. A cicatrix is inevitable, b cause the skin has become disorganized; its vessels have bee developed at the expense of the other tissues, and the structure of th skin has been spoiled beyond the means of restoration. Relying upo this process of cure, there is no occasion for an early application o treatment, and especially so when the nævus exhibits no tendency t enlarge.

The practice of obliteration is an imitation of nature's process o cure; we effect it by compression; but the compression must be constant, so as to empty the vessels completely, and prevent the return into them of the blood; we thus put them into a state the most favorable to insure the contraction of their walls; and if this contractio be preserved for a while, it will continue permanently. There is probability also of the deposition of plastic lymph in the areæ of the vessels, and its subsequent organization; in which case complete obliteration is attained.

We further aim by our treatment to produce this effusion of plasti lymph; and to this end we add the use of stimulants to simple compression. The simplest form of stimulant is a styptic solution, suc as the liquor plumbi diacetatis, or a solution of alum, applied by mean of compress and steadily retained in its place; indeed, speedy cur r cure at all, may be said to depend wholly upon our power of keeping up a steady and constant pressure. The above plan is that of Dieffenbach; and a severer method founded on the same principle is recommended by Behrend, namely, the application of strong acetic acid, followed by compresses wetted with vinegar; this process is apt to produce ulceration of the skin. From the known corrugating and styptic properties of creasote when applied locally, this also might be found to be an useful remedy. When there exists no objection to setting up an ulcerative action, which to us appears wholly unnecessary, we may have recourse to nitric acid or potassa fusa.

The plan of treatment considered above applies chiefly to the flat forms of nævus, and is not so suitable in general to the more prominent forms. Nevertheless, the principle of action must be the same for both, the actual treatment differing only in its manner of application. Thus it has been proposed to induce the deposit of plastic lymph in the nævus by exciting in it the inflammation caused by the vaccine virus; in other words, by vaccinating the tumor. Again, it has been suggested that a seton should be passed through it, or that it should be injected with some astringent solution. An elegant and very promising method was recommended by Marshall Hall, namely, puncturing the tumor with a cataract needle, breaking down its tissue, and then applying a compress. Actual cautery also has had its advocates.

When a more speedy cure is sought for, we may have recourse to ligature, the ligature passing beneath one or two needles with which the base is transfixed. To obviate the loss of integument with which this process is accompanied, Liston proposed to make a crucial incision across the tumor, to reflect the flaps, and then to introduce a ligature through the base of the tumor. Smaller tumors have been taken out at once by simple incision; but loss of blood is always to be guarded against, and therefore the ligature is usually preferred to the knife.

Nævus araneus is best treated by a little operation of our own, namely, touching with a sharp point of potassa fusa; and nævus sanguineus and the enlarged venules of hypertrophia venarum we treat in a similar way. Our plan is to break a small piece of potassa fusa into fragments, to select a fragment with a sharp point, and, with the aid of a small pair of forceps, to use the angular fragment as a needle. We scratch the summit of the boss in nævus araneus with this sharp point and press it into the cavity; we hold it there for an instant, and upon withdrawing it, the drop of blood in the vessel is coagulated and charred. If there be hemorrhage, we press the spot until the bleeding ceases, and repeat the operation. When the blood contained in the umbo of the nævus is charred, the charring commonly extends to the radiating vessels; but if these remain pervious, the caustic is to be drawn briskly along their course, so as to char the blood which they contain. The little capillary varix of nævus sanguineus and the venules of hypertrophia venarum we treat in a similar manner; carrying the caustic along the trunks of the varicose venules of the latter as we do along the radiating vessels of the nævus araneus.

CHAPTER XI.

HÆMIC AFFECTIONS.

[illegible] derived from αἱμα, *blood*, and δυσκρασις, *bad con* [illegible] alteration in the blood, which results in the de [illegible] qualities. The blood is more watery t [illegible] coagulable part is deficient in quantity and density; [illegible] and plastic properties are below the average; [illegible] the blood-corpuscles have a tendency to break [illegible] and permit the solution of their coloring principl [illegible] serum. In other words, the blood is weak, poor, thin, and unec [illegible] nutrition of the body, and the maintenance in healt [illegible]

[illegible] of the blood is associated with, and is a part of a gen [illegible] cachexia, which lowers the vitality of the body, [illegible] the invasion of a series of morbid phenomena re [illegible] degree of debility, from a state not wide in its [illegible] health to a state more nearly approaching the char [illegible] after death. The morbid change in which we [illegible] at present is the altered relation of the bloodves [illegible] of the containing and of the contained part. On [illegible] the vessels are weakened and relaxed, and lose their po [illegible] while, on the other, the blood is more thin and wat [illegible] and more prone to escape through their porous w [illegible] results from this combination of morbid conditions an esc [illegible] from the capillary vessels of the skin, in the form of s [illegible] less profusely dispersed over the surface. The spots [illegible] color, and the affection so engendered is termed purpura

PURPURA.

[illegible] *apyreta; purpura chronica; porphyra*, Mason Good; *hæmorrhœa petechi* [illegible] *petechialis*, Sauvages; *petechiæ sine febre; petechiæ menda* [illegible] *sine febre*, Amatus Lusitanus; *morbus maculosis; maculæ nigræ* [illegible] *spontaneæ; land scurvy; petechial scurvy.*

[illegible] therefore, is a morbid affection of the skin, denoted [illegible] of purple spots dispersed over its surface, and hav [illegible] in the papillary layer of the corium. The spots may [illegible] on every part of the skin, but are most abundant on [illegible] particularly the lower extremities, and are successive in th appearance, fresh spots becoming visible every day until the body more or less completely covered. The spots are at first of a brig purple hue; they gradually become darker, livid, or almost blac at a later period they lose their brightness and their sanguineous color, and as they fade, assume the varied tints of a declining bruise, namely, brown, green, and yellow, until they are entirely lost. As the seat of these changes is the surface layer of the corium, the cuticle escapes alteration, and there is no desquamation.

Such is the history of simple purpura, *purpura simplex*; it is unaccompanied with specific symptoms, the symptoms with which it is joined being those of cachexia in general sometimes aggravated by the feverishness common to cachexia; namely, irritative or hectic fever. In consideration of this simple course, purpura has received a variety of names, all of them being illustrative of the same idea of mildness of character of the disease; for example, purpura apyreta, purpura sine febre, purpura chronica, &c.

But purpura from its very nature, namely, involving a tendency of the blood to escape from its vessels, and a degraded condition of the blood itself, may be much more serious than is here described; the blood may be effused in larger quantity; the effusion may not be limited to the skin, but may extend to the mucous membrane of the alimentary canal; of the air-tubes; of the uterine organs; of the urinary apparatus; or it may take place into the serous cavities, as of the arachnoid, and even into the parenchyma of the different organs of the body. We may thus have a series of aggravations that must convert a very simple affection into one of the serious kind; a mild and comparatively unimportant disease into one of a grave and fatal character. The phenomena above described belong to the variety of purpura termed *purpura hæmorrhagica*.

Simple purpura has been also called *purpura spontanea*, in order to mark the distinction of a purpura which is commonly associated with continued fever; namely, with typhoid, typhus, and the relapsing fever. We have already noticed these fever-spots under the head of roseola, to which they appear to belong, rather than to true purpura; the first effort of nature being the production of a roseolous eruption, the dyscrasis of the tissues determining instead, an exosmosis of the blood, and, consequently, a purpura. It is also to be remembered that a mitigated form of purpura is a common sequence of roseola; the purple and yellowish bruise-like stains being of a purpureous or porphyritic nature.

The relation of purpura to the healthy condition of the body is illustrated in a peculiarly interesting manner by the purpura of sailors, *purpura nautica*, who have been for a long time restricted to a deficient and unwholesome diet. Scorbutus or *sea scurvy* is a purpura hæmorrhagica, and in pursuance of the same idea, purpura simplex has been termed, in popular language, *land scurvy*. Sea scurvy is not, however, confined to the sea; but as it depends upon want of food and proper ventilation, may exist equally on land when those conditions prevail. Hence it is a frequent accompaniment of the famines which sometimes overtake populations.

The skin of elderly persons, particularly those in the lower ranks of life, is subject to an effusion of its blood into the superficial portion of the corium, and giving rise to purple and livid spots of various size. These appearances are commonly observed in the forearms, and

This, however, mus
the best we can say of
rpura, but are independe
sease. They are, in fact, r
are to the practitioner, as
resembles disease, and w
mparative pathology of this

es of purpura a *purpura urti*
licated with the spasmus peri
It might sometimes be a que
the ascendant, the purpura o
s the most conspicuous and pe
is not an uncommon phenome
is at first apparent, to find a
ming the secondary part of a s
s, purpura is chief, while urti
part. We have already adverte
ra in continued fever, and we re
purpura with lichen, in the variet
we have likewise seen it conjo
all attention to the association of
gratification of the lovers of co
say, *purpura pemphigoides.*
gus should be united is by no m
e that we might predicate *à priori;*
logical fact. Both diseases taken s
xia, of dyscrasia, and their union i
der that state is no more than we m
scrasia in which the coloring principle o
llary vessels probably in solution i
higus is a disease in which the seru
the capillaries of the skin, and raises
ous size. If, in the case before us t
s, we should call it pemphigus; but in
are apt to regard, and on reasonable grou
ase. Purpura, like pemphigus, may ac
xia, whatever its source, or any disease w
thus, it might occur with the syphi
do so more frequently than we see
for its development, besides the cach
of poison in the blood, the more exha
from bad and insufficient food. Pemphi
a disorder of the lymphatic diathesis, b
with a tendency to œdema of the subcutan

purpura may exist with little or no cons
severer forms are accompanied with sy
exhaustion. Purpura is also not unfrequ
seases of a neuralgic character, and particul

with rheumatism. The local symptoms of the disease are, a mild degree of prickling and tingling, with tenderness and soreness to the touch. These symptoms in general attract very little attention; but the prickling and tingling are raised to an inordinate and painful degree in purpura urticans.

The spots of purpura have received several names in accordance with their figure and dimensions. The smallest kind of spot, which is a mere speck or dot, is termed *stigma*; next in size to the stigmata is the *petechia*, a round spot resembling a flea-bite, from which the term is derived. The petechia, however, is wanting in the deep red centre which indicates the point of perforation of the haustellum of the insect; although, as it is always formed around the aperture of a pore, a central indentation may be frequently observed. Of a larger size than the preceding, and frequently the product of the union of several petechiæ, are the *vibices*; they are irregular in figure and of various size. Lastly, there may be blotches of larger dimensions than the vibices, and which owe their origin to a palpable extravasation of the blood in more considerable quantity; these are termed *ecchymoses*, or ecchymomata. They may present every variety of figure, and at their decline have the appearance of a bruise of considerable extent.

Willan includes purpura in his order Exanthemata, and associates it with rubeola, scarlatina, urticaria, roseola, and erythema. Its total separation in character and nature from these diseases must be sufficiently obvious; and its occasional association with urticaria and roseola, as an urticaria porphyretica, and roseola porphyretica, affords no grounds for this classification.

The VARIETIES of purpura may be stated as follows:—

Purpura simplex,	Purpura urticans,
" hæmorrhagica,	" senilis.

PURPURA SIMPLEX is represented by the mildest series of the symptoms enumerated above; there are no ecchymoses, and the stigmata, the petechiæ, and the vibices, are distributed more or less partially over the body, chiefly upon the lower extremities; but also on other parts, as the arms, and the front of the abdomen and chest. The eruption of the spots is successive; they are preceded and accompanied by a little prickling and tingling, and by a feeling of soreness and tenderness of the skin, while the constitutional symptoms are such as to indicate general debility and cachexia; for example, languor and lassitude, depression of spirits, loss of appetite, and interruption of the functions of digestion and secretion.

The mode of invasion of purpura simplex and the chief features of the disease are shown in the following cases: We were consulted by a gentleman, the first week of May, for erythema attended with pruritus; he complained at the same time of a slight feeling of sciatica, and some wandering rheumatic pains in his shoulders and arms. He had also a few blotches about the face, and exhibited symptoms of cachexia, induced by anxious and long-continued application to his duties. In other respects, he was a man of asthenic diathesis, somewhat over temperate, and in the habit of fasting too long. We saw him twice, at intervals of a week, and were disappointed with the slow progress of improvement which he exhibited; and on his third visit at the end of a month, he presented a well-developed purpura simplex with yellow cachectic countenance, and œdematous lower limbs. Th purple spots were numerous and discrete, and chiefly confined to th lower half of the body.

In another case, occurring at about the same time as the preceding the details were as follow: A merchant, aged forty-two, a single ma of temperate and abstemious habits, had applied himself too closel to the duties of the counting-house for some time, and had suffered i health as a consequence. He was pale, of fair complexion, far fro robust or strong, and experienced frequent attacks of dyspepsia, co stipation, and rheumatism.

Towards the end of the year 1855, and after two or three weeks dyspepsia, this gentleman was suddenly seized with rheumatic pains which came on during the night. The pains were most severe in th axillæ and across the chest and back; and he had pains, also, in o of his hips. This attack was accompanied with rigors, the bowel were constipated, urine scanty and high colored, with red sedimen but the appetite was not affected. After ten days of suffering, he ha administered to him a blue pill, and immediately following the actio of the pill, and caused by the pill as he imagined, a crop of petechia spots made their appearance on his legs and arms.

At the time of the appearance of the petechial spots, he suffere from great prostration of strength and depression of spirits, his muscle were sore, and he was unable to walk. After four days, during whic fresh petechiæ continued to appear, a crop of vibices suddenly brok out upon the lower limbs; the vibices became the seat of bullæ, whic were filled with a purplish fluid; the integument was œdematous; h was unable to stir his legs; and there were scattered over them a many as twenty bullæ at a time. These symptoms continued for si or seven weeks, when the petechiæ and vibices gradually faded, the skin got well, and he seemed to be recovering.

Six weeks after this another attack of rheumatism suddenly took place; he was seized as before with severe pains in the axillæ, extending across the chest and back; the muscles of the back felt as if they had been bruised, and the rheumatic pains seemed to descend from his chest into the joints of his limbs. While in this state, he had administered to him five grains of blue pill on two consecutive nights, and immediately afterwards the purpura returned as before; firstly, as petechiæ, and then as vibices on the legs, covered with bullæ. With the petechiæ and vibices the legs became swollen and hot, the muscles were sore, and he was unable to move. At the end of a month the symptoms began to subside, and he was sufficiently well to come to London from a distant county to seek our advice.

On the occasion of his visit, in July, 1856, we found him complaining of languor and lassitude; his tongue was pale, there were no petechiæ in the mouth, no sponginess of gums, or bleeding from any internal organ; his appetite was moderately good; and his bowels, usually costive, were regular. He made an average quantity of water, which deposited a red sediment; his pulse was weak, unequal, 126 in the minute, and he complained of occasional palpitations of the heart. His joints were still tender and somewhat swollen, and there were scattered over his arms and legs a plentiful sprinkling of petechiæ; on the legs there were vibices as well as petechiæ, but the bullæ were dried up, and the cuticle was in a state of exfoliation. He remarked that he could always foretell an eruption of petechiæ by an increase of pain in his joints; and, at these times, the slightest pressure on the skin would produce a bruise. The eruption itself gave rise to a little tingling, amounting, when the vibices were numerous, to some degree of pain, but not sufficient to cause anything more than a trifling inconvenience.

This case is interesting, as showing the alliance between rheumatism with the lithic diathesis, and purpura, and this association points at once to the indications which we should follow in our treatment. We prescribed for him the tincture of gentian, with nitro-muriatic acid as a tonic; and the guaiacum powder with bicarbonate of potash as an aperient; with a generous but moderate diet.

One of our friends, of gouty diathesis, and subject to occasional attacks of eczema of the legs, has not unfrequently, in combination with this eruption, a pretty extensive development of purpura, both of the simple and urticating kind. The deep-seated soreness and bruised feeling of the limbs, extending deeply into the muscles, is very remarkable; as is also the stinging and prickling sensation in the skin, wherever the buttons of urticaria are developed. The neurotic nature of the disease is evinced by these symptoms; and to an exhausted condition of nervous tone, may, in all probability, be attributed the altered plasma of the blood, and the non-retentive power of the capillaries and small bloodvessels.

PURPURA HÆMORRHAGICA is recognized by an aggravated development of the general symptoms of purpura; the spots begin in the lower extremities, and gradually creep upwards until they invade every part of the body, with the exception of the hands and face. The spots are of all the kinds above enumerated, stigmata, petechiæ, vibices, and ecchymoses. The most moderate pressure produces a purple mark or ecchymosis, and the ridges of the folds or wrinkles of the skin are traced in purple or livid lines. Moreover, there are mingled with the spots, not unfrequently, vesicles or bullæ containing blood, and there is a tendency to œdema of the subcutaneous tissues.

The spots are not limited to the skin, but are seen also on the mucous membrane of the mouth and fauces, and on the conjunctiva. The gums are spongy and bleeding, and the presence of a similar condition of the mucous membrane in hidden parts of the economy is recognized by hemorrhagic discharges from the nose, lungs, bowels, uterine cavity, and sometimes from the bladder and kidneys; and after death, spots of ecchymosis are found in the greater number of the organs of the body, beneath the serous membranes, and between the coats of the arteries and veins.

The constitutional symptoms of purpura hæmorrhagica are a repetition of those of purpura simplex, but in a more severe degree; there is more languor, lassitude, prostration, and muscular debility. The pulse is feeble and quick; there is depression of the moral powers, and fever of the hectic kind. The frequent recurrence of internal hemorrhages increases the debility and hectic feverishness; there is great faintness; the limbs become œdematous; and the patient sinks from exhaustion, sometimes dying suddenly during the continuance of an hemorrhage, or from the effusion taking place in a vital part.

It is this disease which at one time was so common in our navy, and was described under the name of *scorbutus*, purpura nautica, and which is found to prevail from time to time among masses of people congregated in unhealthy localities, and subjected to vicissitudes of temperature, particularly a cold and damp atmosphere, with bad and insufficient food, imperfect ventilation, exhausting fatigue or deficient exercise, or a too prolonged use of salt provisions; and which is so effectually remedied and prevented by the reverse of these conditions, namely, a dry atmosphere, good ventilation, good fresh and sufficient food, and proper exercise and cleanliness. The general symptoms of sea scurvy are exactly similar to those described under the head of land scurvy and purpura hæmorrhagica, but often assume an exaggerated character. There is more physical prostration, the skin is pale and discolored, the vibices are larger, the gums more spongy and bleeding, the breath very offensive, the excretions both from the bladder and bowels fetid, the pulse weak and feeble, syncope frequent, hemorrhages more copious and general, and death a more common finale of the disorder. On the other hand, it has been observed, in sea scurvy, that the physical depression is greater than that of the mind, that the latter is bright and vigorous to the last, and that the body dies suddenly from efforts made in obedience to the command of the will.

Purpura urticans commences with round elevations of a whitish or pale color, sometimes reddish, which resemble the rounded wheals of nettle-rash; but there is generally less irritation and less pruritus, and the wheals are less evanescent. When of a reddish hue, they have seemed to belong rather to erythema tuberosum than to urticaria; they are somewhat elevated, generally well-defined, and soon become purple and livid, after which they subside slowly, leaving behind them brownish-yellow stains; as they are successive in eruption, they may be seen in all their stages at the same moment. They occur, for the most part, on the lower limbs, and are commonly attended with some degree of œdema. We have seen purpura urticans most frequently in female servants, in whom it has been associated with uterine disturbance; in similar cases, in fact, to those in which erythema tuberosum is apt to be found; and we have also seen i associated with eczema in a person of gouty diathesis and intemperat habits.

Purpura senilis is not very unfrequent in elderly women, pa ticularly in those whose arms have been much exposed to local ir tants of different kinds, such as the sun's rays, water, &c., and is alwa to be met with in our workhouses. It is associated with a prete natural degree of thinness of the integument, which is embrowne yellowish, and mottled, sometimes smooth and sometimes rigid and wrinkled.

"It appears," says Batemen, "principally along the outside of the forearm, in successive dark purple blotches of an irregular form and various magnitude. Each of these continues from a week to ten or twelve days, when the extravasated blood is absorbed. A constant series of these ecchymoses had appeared in one case during ten years, and in others for a shorter period; but in all, the skin of the arms was left of a brown color." The general health is in nowise affected, and the patient suffers no inconvenience beyond that of the unsightly appearance of the blotches.

DIAGNOSIS.—The purple and livid color of the spots; the blood being not in the vessels, but extravasated in the tissue of the skin; and the persistence of the spots under pressure with the finger, are the distinguishing signs of purpura. The purple and discolored stains which follow some forms of roseola, and the purple pimples of lichen lividus, are distinguished by their connection with a distinct roseolous eruption on the one hand, and a papulous eruption on the other.

CAUSE.—The cause of purpura is cachexia resulting from mal-assimilation; the mal-assimilation being one while the effect of generally depressing causes, whether physical or mental; another while the effect of improper or insufficient food, malarious atmosphere, excessive fatigue, defective ventilation, neglect of exercise and habits of cleanliness; or, again, it may be the consequence of some organic disease, of local wakening of the tissues, as in anasarca; or of general and local weakening, as in old age. The severity or violence of the cause may be very different in different constitutions; in some, purpura is easily induced, and the affection is unimportant; in others, the system of the individual only yields when overpowered, and the disease is therefore grave. In the first of the cases of purpura simplex above narrated, the mal-assimilation was induced by fatigue, abstinence, and a certain degree of mental anxiety, perhaps aided by some unknown miasma, proceeding either from the neighborhood of the residence of the patient, or from imperfect drainage in his own house. The mal-assimilation first evinced itself as a neuralgia; then as an erythematous eruption; then boils appeared; and lastly, purpura, with œdema of the lower limbs; the skin of the face during the whole progress of the morbid phenomena being yellow and discolored. In the second case the cause was somewhat similar.

PROGNOSIS.—Purpura may be trifling or serious, according to the nature of the cause, the constitution of the individual, and the violence of the disease. Purpura simplex is not very important; but purpura hæmorrhagica is always serious, in consequence of its complication with internal hemorrhage, which may take place in a vital organ, as in the lungs, and prove suddenly fatal.

TREATMENT.—Originating in debility, our treatment must be strengthening in its operation. It may be necessary at first to regulate the digestive organs and secretions; and when this is effected, These various appearances assumed by the epidermis in the ex tion of its superficial layers, varieties that admit of a simple phys gical explanation, have suggested an equal number of distinguis terms. Thus the squamous form of marking of the epidermis origin to the specific term ichthyosis, and the varieties of ichth according to different authors, are numerous; for example, the br and mealy exfoliation of the cuticle, as seen on the head and and flexures of the joints, is an *ichthyosis furfuracea* and *fari* The net-like tracery of the lines of motion, marked by a white r edge, and usually seen upon the legs, has originated the term *ic sis reticulata;* the areæ of these same lines, usually smooth and g have given rise to the term *ichthyosis nitida*; and a certain nac translucency of the same areæ is the ground of a nacreous v (ichthyose nacrée) admitted by Alibert.

The modifications in the form of the scales of xeroderma ic oides are referable, as we have seen, to those anatomical relati the epidermis to the corium that we have already studied in th chapter of this book; and we may, by a careful inspection of th face of the skin in a state of health, predict the form and arrang of its elements in a state of disease. In the minute subdivision surface by the lines of motion on the eyelids, on the front of the and the flexures of the joints, we see a contrivance for the prod of a powdery or farinaceous desquamation; in the smooth inter between the hair-follicles of the scalp we see the mould of th furaceous scales which it casts off in such great abundance. O legs we see the broader areæ, that are sometimes rough and dirt sometimes glossy and silvery in hue; in other parts we find polygonal beds, that create a scale which is small and thic apt to adhere very firmly, and to be cast seldomer than in other tions. Such parts are the abdomen, the inside of the thighs, an convexities of the joints; and these smaller, harder, thicker, generally dirty scales, have suggested the idea of a serpent's *ichthyosis serpentina.*

The history of xeroderma and ichthyosis is a narrative of a ge degradation of structure of the skin, in which all the tissues pa pate; the corium is hard and thin, and ill-nourished; not unfreque in the hands and feet, breaking into deep fissures; the cuticle an nails are imperfectly formed and brittle, and the former pro break up into scales; and the glands of the skin are equally inv in abnormal action. Not unfrequently there is a total absence of spiration, or only a partial perspiration; and sometimes the sebip glands fail in their function completely, or, continuing to secrete, duce a sebaceous matter, which is altogether altered in its qu from the ordinary standard. Instead of flowing forth upon the and being lost, it seems to become blended with the cuticle, to in sate and dry up into horny masses, which go on increasing in until they attain considerable length.

We are thus introduced to a new form of ichthyosis, one in w the sebaceous substance plays a conspicuous part, and one w presents characters so widely different from epidermic ichthyo o deserve a different designation. The disease in question is a sebaceous ichthyosis, and as the sebaceous matter dries up into a kind of horn, we may also term it *horny ichthyosis, ichthyosis sebacea cornea.*

Horny ichthyosis, like epidermic ichthyosis, is dependent on the organic state of alteration of the skin that we have previously termed xeroderma; and the abnormal skin may remain stationary in its xerodermatous form; or it may become an ichthyoid desquamation; or it may assume the characters of the form of disease at present under consideration, namely, a corneous ichthyosis; or, and not improbably, the whole of these forms may be present together on different parts of the surface; on one part we may find simple xeroderma; in another, squamous ichthyosis; and in a third, as upon the abdomen, the inside of the thighs, and around the joints, the character of the affection may be an ichthyosis cornea.

The sebaceous substance poured out upon the surface of the skin adheres to the epidermis with considerable tenacity; so much so, that an attempt to pick off one of the scales generally results in tearing the cuticle and producing an excoriation. At its escape from the sebiferous ducts, it is a greasy paste of a whitish hue, speedily becoming gray and brown in color, and is moulded into a scale-like shape by the form of a little area to which it adheres, and by the mutual pressure of similar concretions, occupying neighboring areæ. This peculiarity is the more conspicuous when the scale, by constant addition to its surface and growth from below, assumes a more considerable length, and is converted into a spine. The spines may attain the length of a quarter or half an inch, are uniform in height, rounded at the angles, and have a rounded base.

Ichthyosis sebacea, from the nature of its growth, presents two varieties. In the one, the concretion never exceeds the dimensions of a pretty thick scale, this is *ichthyosis sebacea squamosa;* while in the other the scales go on increasing in length until they acquire the character of spines, this latter is *ichthyosis sebacea spinosa.* The general appearance of ichthyosis sebacea, as compared with ichthyosis epidermidis; its thick and convex scales, firm and horny, of a greenish-brown color, and uniform in dimensions, is such as to suggest the skin of a saurian reptile, for example, of a lizard rather than a fish; and with this view, we have termed it "sauriderma:" *sauriderma squamosum* and *sauriderma spinosum.*

There are no constitutional symptoms belonging to xeroderma ichthyosis and sauriosis; they are purely local in their nature, dependent on congenital mal-development and subsequent mal-nutrition.

XERODERMA SIMPLEX.—This term is reserved for the milder form of the affection, in which the all-prevading dryness of the skin, with constant desquamation, is the predominating character, a state that hardly deserves to be distinguished by the term ichthyosis, but which by neglect might degenerate into that disease. Ichthyosis, in its progress towards cure, passes through the state of xeroderma, and a cured ichthyosis not unfrequently presents the characters of xeroderma for the rest of life.

The signs of xeroderma are, a dry and parched state of the skin of the whole body, especially remarkable in the hands; the back of the hands being dry and wrinkled, the palm thick and hard; a dryness and roughness, often a glossiness of the face and sometimes a seeming greasiness of its surface; and an unpleasant odor of the whole integument. The hair is usually scanty; the person is thin; there is commonly an absence of perspiration; and the pulse is apt to be unnaturally quickened by violent or rapid muscular action. The appearance of the skin is not very unlike that which succeeds eczema infantile; the chief difference being the absence of the disproportionate growth of the skin to that of the body it invests, and particularly the hands and feet, which is met with in xeroderma.

XERODERMA ICHTHYOIDES.

Syn. *Ichthyosis vera, simplex, vulgaris, congenita, mollis, furfuracea, reticulata, nitida, serpentina ; lepidosis ichthyosis*, Mason Good ; *ichthyose nacrée*, Alibert ; *Fischschuppenaussatz*, Germ. ; *fish-skin disease.*

XERODERMA ICHTHYOIDES, or ichthyosis vera, is known by the squamous forms assumed by the exfoliating and desquamating epidermis. The epidermis has a grayish or dirty tint; it is more or less broken up into polygonal scales, corresponding with the size and form of the areæ bounded by the lines of motion of the skin; the lines of motion are ragged; and in the hands and feet the corium is apt to split in the course of these lines.

The texture of the skin exhibits throughout a state of defective nutrition; this is least conspicuous in the face, but is very apparent in the limbs, and particularly in the arms; and there is besides, a marked deficiency of subcutaneous adipose tissue. The skin is sometimes thinner, and sometimes thicker than natural, sometimes soft, and sometimes hard. When soft it may be pinched up from the parts beneath in a remarkable manner, and in the different movements of the limbs is thrown into folds which have more the character of a loose vest than of a part of the body. When the skin is hard it cannot be pinched up, but it may be moved backwards and forwards on the subcutaneous fascia, as if there were no binding tissue between the under surface of the corium and the structures beneath; and, instead of falling into folds during the movements of the body, it remains stiff like leather, and seems to depend entirely upon the lines of motion for its power of adaptation to the movements of the joints. The lines of motion are therefore very strongly marked, and form deep grooves, while the inflexible areæ between them are large and smooth. The softer condition of the skin is met with on the neck, the limbs between the joints, the flexures of the joints, and the trunk of the body; the harder condition on the hands and feet and the convexities of the joints. The pores of the follicles, both sebiferous and capilliferous, are prominent from the accumulation within them of a dry hardened substance, of which a portion often projects beyond the level of the aperture. This desiccated substance is the epithelial lining of the follicle, altered in its character by the absence of its oleaginous element. The hair undergoes a similar change; it is either wanting altôgether, or it is dry and brittle, and broken off on a level with the skin.

In a case which we have illustrated among our "portraits of diseases of the skin,"[1] the subject was a little girl between five and six years of age, and small of stature; her face was polished and moderately full, of a dirty hue, and roughened by ragged edges of broken and exfoliating epidermis. The skin of the rest of the body was dry and wrinkled, and around the joints was thrown into folds, looking as if much too large for the body which it contained, or like the parched and shrivelled integument of a person of extreme age and decrepitude. The general tone of color of the skin was a yellowish gray, but the hands were red; gentle pressure with the finger dispersed the redness to a considerable distance around the compressed spot, rendering it perfectly white, and the color was slow in its return. The skin of the back of the hands and fingers was thicker than natural, hard like parchment, and divided by deep grooves into large and irregular compartments; this was especially the case upon the knuckles, and every here and there the skin had broken in the lines of motion, and formed deep chaps. The skin of the palm of the hands exhibited the thickening of the derma, the parchment like yielding of the unpliant tegument, the large compartments, and the deep grooves, more strongly than that of the back, and there were besides deeper fissures and cracks. At the metacarpo-phalangeal joints the fissures were so deep as to sever the integument completely. There was another singular peculiarity apparent in the hands, namely, a want of proportion in length between the skin and the bones, so that the knuckles of the metacarpo-phalangeal articulation made their projection very near the middle of the hand, as though the metacarpal bones had not grown in accord with the integument, or as though the fingers in their growth had carried with them the integument of the body of the hand. This appearance may be imitated by drawing a glove forward on the fingers, and then closing the hand.

The lower limbs were highly characteristic of the disease. The skin of the knees was thrown into numerous prominent wrinkles, on which the epidermis was harsh, dry, thick, and discolored, and in certain parts, where the wrinkles were crossed by transverse clefts, resembled ichthyosis cornea. On the sides of the knee, near the ham, a similar structure existed. From the knee to the ankle the skin was smooth, grayish, silvery and glossy, *ichthyosis nitida*, and in an oblique light might, from its refractive qualities, bear comparison with mother-of-pearl (ichthyose nacrée, Alibert). It was marked by a reticulated tracery, of white lines, *ichthyosis reticulata*, the lines being occasioned by the loosening and rupture of the epidermis at the abnormal grooves of motion of the condensed skin. The spaces between the reticulations, from their regularity of shape and smooth polish, resembled

---

[1] Plate XXXVII. S.

more or less closely the silvery scales of certain fish; and occasio
when the reticulations were of small size and irregular, and th
tre of each scale thicker and more deeply colored than its borde
idea of the scales of serpents was suggested, *ichthyosis serpe*
Around the ankle the skin was thrown into prominent wrinkle
across the instep were three grayish bands, where the epidermi
thicker than elsewhere, and marked by a number of longit
clefts into broken ridges running parallel with the foot. On t
of the back of the foot the skin formed numerous wrinkles corre
ing with the movements of the joints, and along its borders
several deep chaps. The soles of the feet exhibited the same
liarity as the hands, namely, a disproportion in growth betwe
skin and the bones. This was apparent in the great length
foot and the shortness of the toes. The epidermis of the und
face of the foot was very thick, yellowish in color, very much b
and presented a number of irregular edges; on the borders c
surface were several deep and long chaps.

In adults, the apparently normal state of the face, the
wrinkled, and mealy state of the skin of the limbs, and the al
of subcutaneous fat, are quite remarkable. Sometimes, howev
face has a peculiar coppery redness and an oily polish, whic
trasts all the more with the earthy, dried, and mealy or scaly e
mis of the rest of the surface. The skin of the hand is also re
able for its coarseness, and the hand of the ploughman is met w
the man of refinement, to whom manual labor is unknown. In
also, the dry, leathery, wrinkled skin of the hands is very str
We recollect well the shudder that passed over us when we sa
disease for the first time. It was in a gentleman of twenty-fi
thirty; in appearance, in freshness of face, and roundness of fe
one would have believed him perfect in every point. He took o
coat suddenly, and drawing up the shirt sleeve, exhibited the wit
limb of sordid age; dry, scaly, polished here, mealy and rough
while a cloud of small micaceous scales flew into the air.

Another character in connection with this disease is interesti
a physiological point of view. From the absence of all secreti
at least great deficiency of secretion, from the skin, the circul
system loses a natural source of relief when in a state of excite
Hence active movement is attended with increased rapidity of
ration and action of the heart; and one of our patients inform
that after a dance, he panted for breath, he had violent palpitati
the heart, and his brain seemed to reel, from want of air, and f
feeling of suffocation.

XERODERMA SAURIOIDES, sauriosis or ichthyosis spuria, is a
derma, in which, besides the ordinary symptoms appertaining t
disease, there is also an accumulation of sebaceous substance o
surface of the skin, the sebaceous substance undergoing inspis
by desiccation, and one while assuming the form of scales, sa
squamosa, vel sauriderma squamosum; and another while of s
sauriosis spinosa, vel sauriderma spinosum.

IOSIS SQUAMOSA, when congenital in its origin, is a general
; and when it does not present the squamous form, the state
constituting xeroderma is present. Sometimes, however, it is
tal in its development, and partial in its manifestation. The
are most abundantly developed on the abdomen; on the thin
the inside and front of the thighs; on the inside of the arms:
lexures of the limbs, and on the neck.

ohn Ogle has published the case of two sisters, aged ten and
a, in whom the disease made its appearance after perverted
n of the skin consequent on vaccination. Ecthymatous pustules
cers followed the vaccination, and at a later period the skin in
situations became hard and dry, a dark-colored sebaceous
n formed on its surface; and this sebaceous deposit, taking
pe of the normal areæ of the skin intervening between the
motion, presented the character of prominent horny scales.
uations chiefly affected were the hollow between the deltoid
ctoral muscle; the sides of the chest; the knees and legs; and
lly the ankles and dorsum of the feet.[1]

accidental form of sauriosis squamosa is commonly met with
rly persons, and is developed on the face; usually on the cheeks,
netimes on the temples or on the side of the nose. It is a con-
of sebaceous substance, of a dark gray color, hard and closely
nt to the skin, generally implanted on a patch of congested skin,
ving an excoriation when removed with force. These inflamed
re usually obstinate, and indisposed to take a curative action.

RIOSIS SPINOSA, or ichthyosis sebacea spinosa, is a form of the
n in which the scales grow to a considerable length, and are
spines; the disorder being named in consequence, the *porcu-
sease.* The spines are developed more or less generally over
rface of the body, and are sometimes partial, being limited to
ion of the joints.

h regard to length, we have never seen any of the spines longer
quarter of an inch; but Willan records instances in which they
d a full inch in some places. They stand out perpendicularly
surface of the skin, their sides are polygonal, and when the
in its natural position they fit closely side by side, so as to
, by their free extremities, an even and continuous surface.
e ends of the spines are more or less rounded and polished by
n with the dress of the patient, and the sharp angles of the
re rounded off by friction against adjoining spines caused by
vements of the limbs. The base generally corresponds with
all area of skin upon which it is implanted, and to which it is
adherent; but by degrees, as the activity of the secreting func-
bsides, the base becomes reduced to a slender pedicle, and is
broken off.

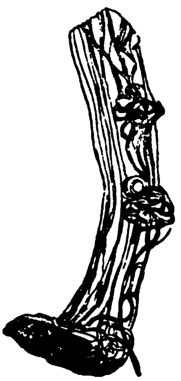
mined with the microscope (Plate VI. fig. 5), the spines are
o possess all the general features which might be expected *a*

---

[1] Medico-Chirurgical Transactions, vol. xlvi. 1863.

priori to be present in small cylinders of desiccated sebaceous stance; they are sub-fibrous, and obscurely laminated; the surfa more or less notched and jagged, the somewhat split, and the base frequently nected with a broad lamina of exfoliated dermis. Their internal structure is still characteristic; they generally contain, bedded in their substance, several m hairs, sometimes running in a serpentine ner through their entire length, but mor quently coiled and twisted, and evid fixed in that position previously to thei cretion by the sebiferous ducts. These c vations lead to the inference, which we b to be true, that the spines are frequen not generally, formed upon the short ha the body as they issue from the skin; the being naturally and as a consequence, much interfered with in their growth.

Fig. 1.



A spine from a "porcupine boy." The spine is magnified nineteen times. It contains in its structure a group of downy hairs, which form convoluted bunches here and there.

Willan has pointed out two appear which the local forms of this disease times present, and distinguished them b name of ichthyosis cornea. In one of the spines are curved or twisted, and unusually long, and sugge idea of miniature ram's horns; in the other the spine is broa single, and constitutes a horn-like mass. These peculiarities are and no purpose is gained by their separation from the typica order.

CACOTROPHIA CUTIS is a state of the skin which is common to period of life, but which we have met with most frequently in y women. It occurs for the most part in the face; the skin los tint and its freshness; becomes thin and discolored, and reser parchment or leather rather than living integument. Of two which have recently come before us, two ladies of the age of tw and twenty-five, one originated in a state of cachexia induced by order of the womb, and the other in defective nutrition of the the sequel of typhoid fever.

DIAGNOSIS.—The only disease with which xeroderma can be founded is eczema squamosum, or the dry, harsh, and thickened of the skin which sometimes follows eczema infantile. Ichthyo essentially a pathological condition of the epidermis, the latter l produced in scales resembling those of a fish, while sauriosis is d guished by thicker and harder scales, sometimes spines, resu from accumulation of the sebaceous substance; the former are w translucent, and shining; the latter grayish or brownish dirt-col and opaque. Both are unlike any other affection, and totall similar to the desquamation of inflammatory disorders of the Sauriosis squamosa of the face we have known to be mistaken malignant disease.

Cause.—The cause of xeroderma and its allies is a special debility of the skin, originating probably in general debility. These affections are congenital, and frequently hereditary. In a family of four children born in India, two are the subject of xeroderma, the other two being free; the disease is congenital and idiopathic. Dr. Ogle's cases of sauriosis took their origin in a debility of tissue consequent on vaccination, and possibly in neglect of the skin.

Prognosis.—As a modification of development and nutrition rather than a disease, these disorders are free from any danger, and admit of being greatly improved by proper treatment, if not wholly cured.

Treatment.—The treatment of xeroderma and cacotrophia cutis is to strengthen the skin by moderate stimulation, applied both externally and internally; externally by local means, and internally by the judicious and careful administration of arsenic.

The *local* remedies are, ablutions with the juniper-tar or carbolic acid soap; the Turkish bath, when it can be obtained conveniently; alkaline lotions or ointment; and anointing the skin thoroughly with neat's-foot oil or benzoated lard after the ablution or bath. As the cure advances, some mild stimulus may be added to the local remedy. By the aid of a few washings and a few baths, all the scales and sordes can be removed from the skin, and it is not difficult afterwards to keep them in subjection.

In the sauriderma squamosum of the face of elderly persons, the squamæ should be removed in the first instance with the help of the starch or arrowroot poultice. The juniper-tar soap should be used twice in the day, and a mild stimulating ointment after the ablutions. The best ointment for this purpose is one of the ammonio-chloride of mercury (one part to three of benzoated lard), with ten grains of camphor to the ounce; or, if a lotion be preferred, the bichloride of mercury in emulsion of bitter almonds will be found of service; alkaline lotions and ointments are also very serviceable.

For cacotrophia cutis, ablutions with the juniper-tar or carbolic acid soap, a lotion of the bichloride of mercury in emulsion of bitter almonds, and the internal administration of arsenic is the proper treatment. The resort to arsenic presupposes that all the usual indications of regulation of the digestive organs and secretions have been attended to, in addition to any special indications belonging to the particular case.

CHAPTER XIII.

HYPERTROPHIC AND ATROPHIC AFFECTIONS.

By hypertrophic and atrophic affections, we mean on the one hand enlargements of the skin resulting from superabundant growth, and the opposite condition to this, namely, wasting of the skin. Hypertrophic affections are illustrated by the common tegumentary mole, nævus hypertrophicus; by the ecphymata or excrescences of the skin, a group which includes tegumentary molluscum, verruca, and clavus; by excessive growth of the integument, tending to throw i into pendulous folds, dermatolysis; by a thickening of the epidermis, pachylosis; by an abnormal growth of the fibrous tissue of th skin, kelis; by induration of the corium, and also of the subcutaneou cellular and adipose tissue, sclerosis; and by excessive growth of th integument and subcutaneous tissues, with infiltration constitutin boucnemia tropica or Barbadoes leg. Atrophic affections are les numerous, and are limited to wasting of the skin, or extreme indura tion and contraction.

In a tabular form, the hypertrophic affections may be enumerate as follows:—

Nævus hypertrophicus,
Ecphyma,
Dermatolysis,
Pachylosis,
Kelis,
Sclerosis,
Boucnemia tropica.

NÆVUS HYPERTROPHICUS.

Syn. *Spilus; nævus maternus; epichrosis spilus*, Mason Good; *Pigmentmuttermäler*, Germ. *moles; mother's marks.*

NÆVUS HYPERTROPHICUS, or common tegumentary mole, is for th most part congenital, but is occasionally developed at a later perio of life. It is a simple enlargement of a portion of the skin, wit an increase in some instances of one or other of its component tissue but without any morbid alteration. In one form of the affection th hypertrophy extends to all the tissues of the integument withou distinction, and we have as the result a simple prominence of t skin of small extent, and usually circular in its form; this is the *næv hypertrophicus vulgaris.* In another instance, besides simple enlarg ment of the integument, there is an increase in the quality of t pigment of the part, rendering it brown or more or less black on t summit, this is *nævus hypertrophicus pigmentosus;* and a third for is distinguished by a growth from the summit, of a tuft of hair mo or less considerable, this is the *nævs hypertrophicus pilosus.*

The VARIETIES of nævus hypertrophicus may therefore be state as follows:—

Nævus hypertrophicus vulgaris,
" " pigmentosus,
" " pilosus.

NÆVUS HYPERTROPHICUS VULGARIS is a tegumentary prominen of the skin, of circular figure, bald and smooth or wrinkled, and n distinguishable in color from the surrounding skin: it is most co monly met with on the face and on the back.

NÆVUS HYPERTROPHICUS PIGMENTOSUS, or pigmentary mole, commonly less prominent than nævus vulgaris, and is remarkable its color as compared with the surrounding skin. With increas energy of growth of the affected spot, there is also a more energ production of pigment, which varies in tint of color from a yellowish brown to a deep black. Pigmentary nævi are generally of small size, and circular in form; at other times they are large and irregular in figure, and occasionally have been known to cover one-half the face, or a considerable portion of the trunk or limbs. They are most frequently met with on the face, and next in frequency on the back.

NÆVUS HYPERTROPHICUS PILOSUS is a prominence of the integument of a similar character to nævus vulgaris, but covered by a growth of short and stiff hairs, sometimes of considerable length, and associated with an increased production of pigment in the rete mucosum. Pilous nævi are met with on all parts of the skin which are normally organized for the growth of hair, and are only constantly absent in the palm of the hands and sole of the feet. We see them often on the face as a single small prominence covered with hair; sometimes there are more than one, and they are not unfrequently intermingled with nævi pigmentosi; at other times they occur on the trunk of the body or limbs in single patches of considerable extent, or as numerous patches dispersed over the skin. Alibert records the case of a young lady whose skin was studded, over nearly every part of the body, with moles of a deep-black color, from which a long, black, thick and harsh, woolly hair was produced. Villermé, in his article on the hair, in the *Dictionnaire des Sciences Médicales*, observes, "I saw at Poictiers, in 1808, a poor child between six and eight years of age, that had a great number of mother's marks disposed in brown projecting patches of different dimensions, scattered over various parts of the body, with the exception of the feet and hands. The spots were covered with hair, shorter, and not quite so thick as the bristles of a wild boar, but presenting considerable analogy with them. This hairy covering, with the spots upon which they grew, occupied perhaps one-fifth of the surface of the body."

CAUSE.—Tegumentary nævi are for the most part congenital, and sometimes hereditary; and we must regard their origin as being physiological rather than pathological. Like vascular nævi they are termed mother's marks, from the popular belief in their dependence on the imagination of the mother during pregnancy. Daniel Turner records the case of a girl who "was born all over hairy, from the mother's unhappy ruminating and often beholding the picture of St. John the Baptist hanging by her bedside, drawn in his hairy vesture." And, on questioning a boy as to a nævus pilosus of some size on the side of the jaw, he informed us that the patch represented a sucking pig that his mother had longed for during her pregnancy.

TREATMENT.—We are sometimes consulted as to the removal of tegumentary nævi, not on account of any inconvenience attending them, but on the ground of their occasioning deformity. They are easily removed by the knife, care being taken to direct the incisions in the line of the ordinary folds of the skin. But we prefer to effect their destruction with the potassa fusa. A point of potassa fusa is introduced into the centre of the nævus, it diffuses itself through the areolar mass; the disorganized tissues dries up into a scab, and falls

persons. It has the appearance of a small pendulous bag of
ent, in some instances appears to be formed by the expulsion
ardened gland from a small tubercle of molluscum sebiparum.
ot usually solitary like ecphyma molluscifiorme, but is fre-
sprinkled over the neck so as to occasion a small crop that
e mistaken for some form of lichen, but for the absence of all
f redness and the pendulous figure of the little bulbous or cylin-
nass.

yma acrochordon is a disease of an unhealthy and ill-nou-
skin, and is due to want of tone and vigor in the cutaneous

easily removed by the scissors, or by touching with a strong
n of caustic potash.

ECPHYMA VERRUCA.

Syn. *Warts; sessile warts; die Warze,* Germ.

RUCA (Plate VI. figs. 1, 2) is a small hard tubercle resulting
xcessive growth of certain of the papillæ of the skin, accom-
with a proportionate increase of the epidermis. The largest of
rucæ are met with on the hands and feet, where the cutaneous
are of greater length than elsewhere, and the epidermis
. In this situation they rarely exceed the dimensions of a split
hile on other parts of the skin they are considerably smaller
s prominent.

ructure, a verruca is composed of a cluster of enlarged papillæ
d with a little mound of epidermis; the number of the papillæ
ining the breadth of the tubercle, their length its height. Warts
ular in figure, and when of small size, as upon the body gene-
re smooth on the surface; but when of considerable bulk, as
e hands and fingers, the summit is apt to be worn off, is rough
colored, and resembles the extremity of a bundle of fibres sur-
d by a collar of thickened epidermis. This, in fact, is the real
re of a large wart, the hypertrophied papillæ acting separately
ducing each for itself a sheath of epidermis. The cuticular
on above the heads of the papillæ is necessarily composed of
erpendicular sheaths, converted into solid fibres in their
, and adherent to adjoining sheaths, while the epidermis around
e of the wart, generally somewhat thickened, acts as the collar
holds all these sheaths or fibres together.

section of a wart exhibits the structure above described very
; and if we make transverse sections of the summit, we bring
cture in question more distinctly into view. These sections
w that the papillæ are unequal in length, for in successive
s we shall cut across at first one and then several papillæ, until,
roceed more deeply, we find the section evenly studded all
th the bleeding ends of divided papillæ. A similar demon-
of the fibrous structure of a wart is afforded by watching the
s of a chronic wart of large size. At first the summit is rugged

and composed of isolated particles, the ends of the fibres, in pop language, for popular observation is often in advance of science, te the *seeds* of the wart; the verruca in question being a "seedy w In the next place, the wart is apt to split in the direction of these tical fibres, sometimes into two or more portions, and then we what has been termed a lobulated wart, *verruca lobosa*, and popu a bleeding wart.

Warts are developed most frequently on the hands, next or wrists, the forehead, the scalp, and the trunk of the body, an more common in young and aged persons than in the adult. In dren they are found usually on the hands and fingers, and on y persons after puberty are met with on other parts of the body.

Occasionally we meet with what may be termed an eruptic warts, a crop consisting of fifty or a hundred, or several hun small warts, clustered closely together. An eruption of this sor unfrequently takes place on the forehead, near the margin of the and on the temples. We have seen it also on the back of the w extending for a short distance upon the forearms, and upon dorsum of the hands. Lately, we had before us a little girl, in w there existed a patch of closely-set verrucæ, which commenced o back of the shoulder and upper arm, and extended downwards the back, widening as it progressed, to the lower part of the th Rayer quotes from M. Rennes another instance of a crop of of considerable extent; "a band of agglomerated warts, from lines to an inch in breadth, extended from the upper and ant part of the right side of the breast, underneath the clavicle, along arm and forearm of the same side, till it reached the carpus, wh increased considerably in breadth, and finally overspread the w palm of the hand."

The common wart, verruca vulgaris; the small and confluent w verrucæ minimæ, verrucæ confluentes; and the fibrous and the l lated warts, verrucæ fibrosæ and verrucæ lobosæ, have been te sessile warts, verrucæ sessiles, in order to distinguish them from verruca acrochordon or pedunculate wart; but we have shown in preceding section that the acrochordon is a growth of the integu without increase of dimensions of the papillæ and epidermis, a soft and pendulous bag of skin, and totally different in every par lar, excepting that of being an excrescence of the skin, from verr and we have therefore grouped it more in accordance with its sp characters, with ecphyma mollusciforme.

We have sometimes seen a filiform kind of wart, *verruca filifo* which appears to originate in hypertrophy of a single papilla of skin, or perhaps of a fasciculus of three or four papillæ. Rayer pares a patch of these verrucæ very aptly to "coarse plush."

There remains, however, to be considered another form of first described, we believe, by ourselves, namely, *verruca dig* This wart is by no means uncommon; it is met with on the scalp sometimes exists in that situation in considerable number. Fix the skin of the head, and throwing out on all sides its pale, finge papillæ, it may be mistaken for an insect, until its fixed adhesi the skin and immobility prove the contrary. Sometimes the digitated wart is single, or a few only are met with; at other times, they are so numerous as to act as an impedient to combing the head. They may be small, consisting of two or three digitated papillæ only, or large, forming a tuft of hypertrophus papillæ of considerable size. They are longer than ordinary warts, and commonly range from two to four lines in height.

The *diagnosis* of verruca, after the above description, will not be difficult to determine; the only form of affection with which it is likely to be confounded being the smaller molluscous ecphymata and acrochordon.

The *cause* of verrucæ is an abnormal nutrition of the skin, sometimes determined, apparently, by superabundant energy of growth operating upon a sound skin, and sometimes upon a weak and impoverished skin, as in elderly persons.

The *prognosis* is favorable; verruca is an inconvenience rather than a disease; at its worst it is a deformity; and is not difficult of cure even in its most extended shape.

TREATMENT.—The best application for the removal of isolated warts is potassa fusa; and it is also the most suitable remedy for the verrucæ digitatæ of the scalp. If caustic potash be objected to, any of the strong acids may be employed, and especially the acidum aceticum fortius. The potassa fusa destroys the wart at one application; the acids require to be used at short intervals for a certain period of time. Creasote and carbolic acid also are useful remedies.

When warts are general in their eruption, a constitutional treatment may be called for, and arsenic will be found remarkably successful in their dispersion; indeed, in certain cases, is the only certain means of cure. In these general cases, the constitutional remedy may be aided by painting the eruption with the compound tincture of iodine, or sponging with a moderately strong lotion of the bichloride of mercury.

As a popular remedy for the removal of warts, the milky juice of the chelidonium majus is much esteemed amongst country people; while, in Sweden, according to Mason Good, warts are "destroyed by the *gryllus verrucivorus* or wart-eating grasshopper, with green wings, spotted with brown. The common people catch it for this purpose; and it is said to operate by biting off the excrescence and discharging a corrosive liquor on the wound."

ECPHYMA CLAVUS.

Syn. *Clavus; corn; fibrous corn; die Huhneraug*, Germ.; *callus; callosity; laminated corn; tylosis; die Schwulle*, Germ.

CLAVUS is an increased thickness or hypertrophy of the epidermis, generally situated on a prominent part of the body, for example, the joint of a toe, and due to an inflammatory congestion of the skin, the result of pressure or friction.

Corns may be developed on any part of the body where pressure and friction exist to an inordinate degree; thus they may be occasion by too tight or too loose a shoe; in the one case being due to pressur in the other to friction; and they are most actively produced wh both these causes are combined. They are met with the mo frequently on the feet, on account of the unpliant nature of the cove ings of those organs; between the toes from pressure only; and o other parts of the body from distortion; or local pressure, induced b different exercises, occupations, or trades.

The first effect of pressure and friction on a portion of skin inte posed between the prominence of a bone and another resisting bod such as a shoe, is soreness and tenderness; to this state follows larger afflux of blood than natural, causing hyperæmia; with hype æmia carried to a moderate degree, there is a more energetic nutriti of the corium, and a more active cell-formation, operating in the pr duction of cuticle. We have, therefore, before us, the process of co struction of a corn, or rather, of a callus or callosity, in all its detail namely, pressure, congestion, and increased formation of epidermi The kind of corn so produced is a *laminated corn* or *callus*. The is no alteration in the texture of the epidermis, and no alteration the corium beyond vascular congestion, the result of a moder degree of inflammation. In a callus, the epidermis will sometim acquire a very considerable degree of thickness, and, as may inferred, the increased thickness will contribute to the aggravation the real evil rather than to its alleviation; the corium beneath t callus is subject to increase of inflammation from time to time, whe more than the usual amount of pressure is exerted, or where it continued for a longer period: and not unfrequently an effusion blood takes place from the bruised surface. In making a section such a callus, the epidermis is found to be streaked with different tin of color, produced by layers of blood effused from time to time an fading in hue as they advance in age; and the laminated structure the callus is self-evident.

The callus occupies a surface of considerable extent, and produc a certain uniformity of pressure on the congested corium; hence is more bearable than if its size were smaller, and the pressure co sequently less diffused. But, besides the callus, we have also produce by the causes above mentioned, a thickening of the epidermis of more limited extent, constituting a corn; and in the formation of corn a new series of pathological phenomena are set up; the pressur of the thickened mass of cuticle on the tender and inflamed coriu produces a depression; the continuance of the pressure gives ri to absorption of the corium, and very soon the plane surface of th corium is converted into a cup or crater. The thickened mass cuticle is pressed into this cup, and is pointed or blunt in proportio to the breadth and depth of the cup, reminding us of a nail (clavu inserted into the skin; hence the scientific designation of th disease.

The new position of the formative organ of the epidermis, namel the corium, occasions an alteration in the direction of the strata the epidermis. The strata formed within the cup assume natural the cup shape, and as they rise to the surface present the broken edges of a cup, with a small central mass or nucleus (the eye of the corn), suggesting the idea of vertical fibres rising to the surface, and the ruggedness is increased by the broken edge of the epidermis that corresponds with the border of the cup. The fibrous appearance of the centre of the clavus has suggested the idea of roots; and the central cup-formed mass of hard and condensed cuticle has been regarded as the core of the corn. The notion of a nail driven into the flesh is not so remarkable, if we contemplate the constant pressure of this sharp point into a bed of tender and inflamed corium, as must necessarily happen in the act of walking; and we perceive also the principle on which the chiropodist operates in digging out the corn.

A survey of the process by which the growth into the skin is accomplished by the clavus will explain to us other phenomena that are apt to take place in a foot that is invaded by this troublesome disorder. Subcutaneous bursæ are apt to inflame, giving rise to *bunion;* the heads of bones become enlarged, from extension of inflammation of the fibrous tissues of the joint; the bed of the clavus often suppurates; and sometimes the ulceration proceeds so deeply as to perforate the joints of the toes, or produce absorption of the heads of the bones.

There is one form of clavus, called *soft corn,* which is intermediate in its character between the callus and the common corn. Like callus, it makes no projection superficially; and like clavus, it grows inwards to a considerable depth, producing absorption of the corium, and often suppuration. The soft corn is situated between the toes, and results from the pressure of the joint of one toe against a point of skin of the opposite toe; sometimes the corn is formed on the skin corresponding with the offending joint, and sometimes on both. Constantly moistened with the perspiration taking place between the toes, the thickened cuticle is commonly white and sodden, hence its name, *soft* corn; and the softening is not unfrequently increased by a serous effusion which takes place from the surface of its cup. The cup is converted into a kind of vascular secreting membrane, and continues to exude an albuminous fluid for many months. Sometimes the thickened epidermis is perforated in the centre, and the effusion issues through the aperture; and sometimes the corium of the inflamed cup takes on to suppurate. Soft corns are always peculiarly painful, and we have known them give rise to deep and obstinate ulcerations, and produce caries of the bone.

The *diagnosis,* the *cause,* and the *prognosis* of corns may be gathered from our description of their history and pathology.

TREATMENT.—"Remove the cause" is a favorite dogma of medicine; but the removal of the cause is not always practicable; hence we must study how we can best afford relief to these troublesome disorders. The callus may be softened by moisture, as by soaking in warm water; by the application of a starch or soap poultice; and being softened, the thickened cuticle may be thinned by scraping with a blunt [illegible] removal [illegible]

[illegible] size [illegible]

[illegible] after the operation [illegible] with a piece of [illegible] plaster of buff leather [illegible] pressure from the [illegible]

[illegible] may be very [illegible] iodine painted [illegible] this application [illegible] and friable, and [illegible] water, so useful to the [illegible] feet afflicted with [illegible] Daily washing with [illegible] a piece of cotton wool [illegible] soft corns; and in [illegible] with spirits of camphor [illegible] be removed at night, and [illegible] rated spirit.

[illegible] PAPILLOSUM.

[illegible] term for distinguish[illegible] hypertrophy of the papi[illegible] published in the first volume [illegible] presents several points of c[illegible] association with arrest of devel[illegible] The case fell under the tre[illegible] Dr. Church; its leading featu[illegible] her pregnancy, had a frig[illegible] with an imperfectly developed he[illegible] developed skin: the patient died [illegible] obstructed circulation, the hea[illegible] the small size of the thoracic aor[illegible] open.

[illegible] the girl looked two or three yea[illegible] was limited to the left half of t[illegible] similar affection of the mucous membra[illegible] the mouth. The skin of the left side [illegible] the right, and there were six lar[illegible] dispersed over the face and trun[illegible] forehead and nose: a second, the cheek from the ch[illegible] to the ear; a third, the neck; a fourth, the scapular region of the back; a fifth, the chest; and a sixth, the axilla; the four smaller patches occupying the back, the loin, and the buttock.

The blotches on the chest and scapular region, and also the small dorsal patches, were chiefly distinguished by a steel-gray color, the skin was smooth to the touch, soft, easily pinched up, very slightly elevated and marked by small polygonal epidermic scales. The blotches on the forehead, cheek, neck, and axilla, were papillated, and resulted to all appearance from hypertrophy of the papillæ cutis, enveloped in hypertrophous cuticular sheaths. On the forehead and face, the papillæ were minute; on the neck they were larger and had the character of warts, some being pedunculated; upon the areola of the mamma they were long and conical; and in the axilla longer than elsewhere. The papillæ were all colored with pigment; but the pigment was most abundant in those situated on the areola mammæ and in the axillæ.

The buccal mucous membrane lining the inside of the cheek, as well as that of the palate and tongue, was also papillated, the papillæ having a dull yellowish white color; but a more remarkable illustration of defective nutrition was shown in the smaller size of the teeth of the upper jaw on the left than on the right side, the small size and decayed state of the two premolars, and the absence of the large molars, the place of the latter being occupied by a broad and shallow groove, thickly studded with hard papillæ of considerable length.

DERMATOLYSIS.

Syn. *Cutis pendula, pensilis, lapsus, rugositas; chalazoderma.*

DERMATOLYSIS, or looseness of the skin, is a term for which we are indebted to Alibert, and its application is not merely to abnormal extensibility of the skin without hypertrophy, but also to excessive growth of the integument associated with defective elasticity of the dermal tissue. Of the former, we have a remarkable example in the case narrated by Daniel Turner (page x.); and of the latter, we see instances in the production of pendulous folds of integument on the eyelids, beneath the chin and along the front of the neck, around the lower part of the abdomen, and in relation with the organs of generation both male and female. A parallel phenomenon is seen in the laxity of the integument, which is apt to follow the cessation of unwonted distension, as after obesity and parturition, and in the occurrence of pendulous mammæ and pendulous folds of abdominal integument.

Alibert distinguishes five localities in which dermatolysis most frequently occurs, and designates five varieties of the affection, namely:—

Dermatolysis palpebralis, Dermatolysis collaris,
" facialis, " abdominalis,
Dermatolysis genitalium.

DERMATOLYSIS PALPEBRALIS is, he observes, very common, and he notes the case of a peasant girl accustomed to agricultural labor, in whom folds of integument formed upon the upper eyelids grew to so great a length as to fall like curtains before the eyes, and hung for some way down upon the cheeks.

DERMATOLYSIS FACIALIS, according to the same authority, is also common; but one case he cites as very remarkable; it is that of a shepherd, forty-five years of age, whose head was nearly one-fourth the length of his entire body. This prodigious size of the head was due to the development of six large folds of integument, which hung from his forehead and the right side of the cranium; the frontal fold drew down the eyebrows and eyelids, and almost pulled the globes of the eyes out of their sockets, completely destroying his vision.

DERMATOLYSIS COLLARIS is seen not unfrequently in old persons who have once been fat, and have since fallen into a state of emaciation. Alibert had a remarkable case of this kind, in which a thick pendulous fold of integument hung like an immense wattel from beneath the chin and the front of the neck down to the middle of the breast.

DERMATOLYSIS ABDOMINALIS is more common than the preceding forms, and is most frequently met with in the female sex, the result of exhausted obesity and parturition. Alibert narrates that a member of Parliament was afflicted with this disorder to such an extent, that it was necessary to gather up the integument into an immense belt. In a female, the abdominal parietes formed a large pouch which hung down upon her thighs. And in a celebrated polyphagist, Tarare, when he had failed to eat to the full extent of his capacity, the integument of the abdomen was so loose, that it could be wound round his body and almost complete the circle in front.

DERMATOLYSIS GENITALIS is illustrated by Alibert in the case of a girl of twenty, in whom the glans clitoridis and neighboring integument within the labia majora had grown to so great a length, as to challenge comparison with the "tablier" of the Hottentots.

PACHYLOSIS.

After certain chronic affections, in which the skin is secondarily involved, particularly that of the lower extremities, the epidermis is produced in abnormal quantity; it becomes thick, dry, and harsh, and cracks into scales of irregular form and size. This appearance of the skin has been admitted by Willan into his description of ichthyosis, and referred to by other writers, under the title of accidental ichthyosis; but it is quite clear that the present disorder bears no relation to that affection. As an inordinate production of epidermis dependent on hypertrophy of the papillæ of the skin, it has a title to a place in this group, while its principal character, namely, that of thickening and condensation of the skin, seems to point to pachylosis (παχὸς, crassitudo) as a fitting designation.

This state of the skin occurs for the most part in elderly persons, and not unfrequently after the healing up of an old ulcer of the leg.

have also seen it follow some lasting cutaneous disorders, such as
onic eczema; and sometimes associated with anasarca.

TREATMENT.—The treatment of pachylosis consists in sponging the
ly surface with a damp sponge, dipped in fine oatmeal, diligently
: five or ten minutes, and then anointing the surface with a lini-
nt of lime-water and oil; adding to this liniment, as the torpor of
e skin gradually yields, a few drops of liquor ammoniæ. In the
urse of a short time the natural tone of the skin may generally be
stored by this treatment. Another mode of treatment is to remove
much of the hardened coating as possible with soap, then cover it
with a plaster of diachylon softened by melting with an equal
oportion of almond-oil, and bind it closely to the skin with an
astic bandage. The dressing may be repeated every second day;
d every time the plaster is removed the diseased surface should be
ell washed with soap. This process should be continued until the
hole of the hardened cuticle is cleared away, and the skin brought
to a healthy state.

KELIS.

n. *Kelois; chelois; cancrois: keloides; kelis vera, genuina, ovalis, radiciformis, cylindracea, clavata; dartre de la graisse; der knollenkrebs*, Germ.

KELIS is a flat tumor of the skin, resulting from hypertrophy of
e fibrous tissue of the corium, and producing absorption of its
pillary layer. The tumor is composed of a dense mass of fibrous
sue, covered by a thin, semi-transparent and homogeneous layer of
dimentary areolar tissue similar to that which covers an ordinary
catrix. In a word, kelis is a degeneration of structure of the corium,
e deeper part being converted into a coarse and ligamentous form
f fibrous tissue, and the superficial part passing into a rudimentary
rm of the same tissue.

As the pathological alteration which constitutes kelis begins in the
ep layer of the corium and rises gradually to the surface, there is
me difference of appearance of the tumors at different periods of
eir stage of progress. In the early beginning the papillary or
scular layer of the derma is unscathed, and the growth has the
pearance of a deep tumour, while at a late period the disease exactly
sembles a cicatrix, but raised above the general level of the skin.
the latter state, which may be regarded as its fully developed and
aracteristic form, it is of a pinkish-white color, with an elevation of
ree or four lines, marked on the surface with ridges formed by
rous bands and cords, which sometimes radiate at each end from
central ridge, and sometimes constitute a coarse network, bounded
some parts of its circumference by a rounded and sometimes free
rder; at others, sinking into the skin by thick processes, which
ggest the idea of roots; the immediate surface being smooth, glossy,
t, and velvety to the touch, semi-transparent, and traversed by
all bloodvessels, which pursue a straggling course between the
ous bands, and dip into the deeper tissues from point to point.

Kelis makes its beginning either as a cylindrical prominence of thickened and indurated fibrous tissue, *kelis cylindracea*, or as a tubercle. When it appears as a cylindrical prominence, one end of the cylinder is commonly rounded and larger than the other, *kelis clavata*. In its tubercular form two tubercules very commonly show themselves at the same time, and after a while are united by a ridge, sometimes simple and sometimes nodulated, and so give rise to a tubercle resembling a dumb-bell. At other times the tubercle spreads into an oval disk, *kelis ovalis*, or, spreading out more irregularly, appears to be implanted by its angles into the deeper portion of the corium, *kelis radiciformis*. This latter conformation has suggested its comparison with a crab.

The spreading kelis occasionally assumes a remarkable figure; nearly square in its dimensions, it projects at the four angles into a rounded cord which sinks into the skin like a root, and in general appearance resembles the skin of an animal with outspread legs; at other times it is not unlike a bird, with head and spreading wings, and tail. By the vulgar the spreading kelis has been mistaken for a toad half-buried in the skin; and, with its borders free and overlapping the sound skin sometimes to the extent of an inch, there would appear to be some ground for the popular delusion.

Kelis is sometimes single; more frequently there are several tumours; and sometimes a part of the body, such as the breast or back, is studded by a multitude. The single tumors are most apt to take on the spreading character, and very frequently they enlarge by uniting with outlying tubercles, and in this manner create the appearance of legs or roots. There are certain situations also which are not only favorable for the development of the tumor, but also for its growth; for example, the region of the sternum. Whether this be attributable to a less active circulation at the middle line or to the greater preponderance of fibrous tissue at this point, is difficult to say. On the sternum we have seen a kelis measuring nearly four inches in length by three inches in breadth. Another peculiarity of the disease is an absence of the symmetry of distribution that marks so many other affections; it is commonly met with on one side of the body only, and not at all, or in a less degree, upon the other. A lady at present under our care has thirty or forty tubercles on the front of the chest on one side, and none on the other side. A gentleman has a spreading kelis over the lower jaw on one side, but no other tubercle on the rest of the body; and another patient has a single kelis ovalis, or rather rotunda, on the summit of the shoulder.

Kelis is a disease of the adult, and not very uncommon; the proportion to other diseases of the skin being one in two hundred, or one-half per cent. It is pretty equally distributed between the sexes, and is chronic in its nature, commonly lasting a lifetime. We have met with examples which have been in existence without much alteration of character for nearly twenty years.

Kelis has no constitutional symptoms, and its subjects are frequently in the most perfect health. The local symptoms are sometimes very trifling and sometimes severe; in the latter case they are intermittent or occasional, and for the most part excited by warmth of the body and pressure. The symptoms most commonly complained of are, itching, tingling, smarting, burning, stinging, shooting, lancinating, &c. One of our patients was annoyed with a degree of itching which rendered scratching irresistible; and several have spoken of a burning itching, and of a sensation which they compared to piercing the skin with hot needles.

Kelis is *idiopathic* and *traumatic;* idiopathic when it arises without any previous morbid alteration of the skin; traumatic when it follows an injury and rises upon the cicatrix of a scald or burn, upon that of a boil or strumous ulcer; or, in fact, succeeds any form of lesion of the skin. This difference of origin of the disease has created a distinction into *kelis vera* and *kelis spuria;* but as far as pathology is concerned, the two forms are identical. There is no difference of structure between them; the only difference relating to the amount of destruction of the corium by the injury which has acted as an exciting cause. It would therefore be more practical to abandon the terms "vera" and "spuria," and adopt instead the more correct and intelligible expressions *idiopathica* and *traumatica.* The practical dealing with this disease also suggests the use of the terms *kelis tuberculosa* and *kelis serpens,* the former retaining its tubercular form permanently, the latter taking on the spreading character.

Kelis was first particularly described by Alibert, who distinguished it by the name of "cancroide," assigning as his reason for selecting that term the judicious practice of early observers, of designating diseases by the names of the things which they most nearly resembled. The word "cancroide" is therefore intended to draw the attention to a supposed resemblance in form between this disease and a crab, and is synonymous with "cheloide," derived from χηλὴ, forceps cancrorum, the term used by Rayer and Gibert, by reason, remarks the latter, of the likeness which the prolongations of the tumor bear to the feet of the crab. Another name given to this affection is kelis, derived from κηλὶς, macula, vel probrum; this term having reference to the singularly cicatrix-like appearance which the disease so frequently presents; or, perhaps, more correctly still, from χηλη, a sea bank, a mole; in other words, a ridge protruding above the level of the surface.

Besides the preceding, Alibert had another reason for employing the term "cancroide," namely, that of associating the disease with cancer. The cancroides, he observes, maintain a relation both with tetters and cancers; like the latter, they often give rise to acute, pungent, and lancinating pains; and he asks, "Will they form an intermediate genus?" This is a more important question than that of the etymology of the disease.

It is quite true that in many of their features the keloids have a remarkable resemblance to cancer, for example, in their hardness, whiteness, the meandering of small veins on their surface, the total disorganization of the skin, their extension into the deeper parts of the skin by root-like prolongations, and, above all, in the acute, burning, smarting, and lancinating pain with which they are frequently attended. On the other hand, it must be admitted, that they if ever, pass into a state of ulceration, they have none of the large and tortuous veins which surround a cancerous tumor, the adjacent skin is wholly unaffected, the lymphatic glands are not implicated, the tumors are extremely slow in their progress, often stationary for years, and sometimes they disappear spontaneously.

Cazenave and Schedel remark, that the kelis should be "carefull distinguished from cancerous affections, with which, in truth, it ha very little analogy." Rayer says, that "keloid formations do not see to have any deleterious influence on the general health." Dr. Warren calls it a "troublesome and dangerous disease." Troublesome i is certainly, but not dangerous; and the case upon which Warre founds his inference of the danger of kelis, we believe, to have bee not an instance of this disease, but one of cancer. He states that i affected the ala of the nose; that, after several extirpations, "a considerable tumor appeared on the face, and another under the jaw, while, a fortnight after, "a tumor is seen extending from the right ey and side of the nose to the cheek, where there is a frightful enlarg ment, including all the textures of the face and gums."

Alibert records twelve cases of kelis; Rayer, five; Biett, three Gibert, two; and Warren, one. Of the twelve cases reported b Alibert, eight occurred in women. From this circumstance he wa led to deduce the inference, that the disease was more common i females than in males. Five out of seven cases noted by ourselve were, on the contrary, males; while four out of the five mentione by Rayer were also males. Of the entire twenty-seven, the sex i unmentioned in three; and of the remainder, fourteen were female and ten males.

In a good example of kelis illustrated in our "portraits,"[1] th patient was a robust man, forty-eight years of age. The disease fir attracted his attention about seven years before his application to u He then perceived upon the middle of the breast four slightly-raise tubercles, which coalesced, and gradually increased in size, until the formed a broad-spreading, irregularly-shaped excrescence. In figu this excrescence bore some resemblance to a bird, the head of th bird pointing towards the right breast, the wings spreading out abo and below, and the body and broad tail crossing the sternum to th left breast. The length of the kelis, from the head-like process to th opposite extremity, was three inches and three-quarters, while, acro the wings, at its broadest part, it measured three inches. Its elev tion from the surface of the skin varied between two and three line the most elevated part being its border.

On a first inspection, the morbid excrescence had the appearan of the cicatrix of a burn, and, upon closer examination, the only cha acter at variance with that idea was its elevation from the surroun ing skin, particularly at its borders. Its color was pink, lighter i the centre than at the circumference, and it was marked on the surfac by a coarse network of prominent white lines or ridges. The gener direction of these white lines corresponded with that of the lon

---

[1] Portraits of diseases of the skin, Plate XLIV. R.

r of the kelis, but upon the four processes of the excrescence
l a transverse or semicircular direction. From these processes
er of red and white lines were given off, which resembled roots
g into the substance of the unaffected skin.

s also evident, from an examination of the kelis, that its growth
ed by an extension of the margins of the four processes only,
ie intermediate portions of its border, namely, those forming
les between the processes, were drawn onwards over the sound
ithout participating in the deeper growth. The borders in
tuations were rounded and free, about two lines in thickness,
robe might be passed beneath them to a distance of half an
id, in one or two places, to a greater depth. Indeed, these
ways were a source of some inconvenience to the patient, by
to collect dirt and flue from his dress, and he was obliged,
me to time, to have recourse to means for clearing them out.
les the pink hue of the excrescence, its cicatrix-like lines and
the depression between the latter, and its elevated borders, the
of the kelis presented a smooth polish, like that of the new
the cicatrix of a burn, and a sort of semi-transparency. There
so visible, here and there, particularly about its circumference,
small meandering bloodvessels, apparently veins, collecting
irning blood from minute tributaries.

he touch the kelis gave the idea of a hard, resisting structure
ro-cartilage, invested by a soft, velvety-seeming skin. The
portion was harder and more dense than the circumference,
white lines had all the rigidity of bands of fibrous tissue.

patient's application to us had reference to the propriety of
ng the excrescence, in consequence of the pain and annoyance
h it had given rise during the last three years, and more par-
y as the pain was evidently on the increase. At times he suf-
rom excessive itching; at other times the pain was smarting,
g, and shooting; and occasionally he experienced a darting
n, which he compared to an electric shock. The pain did not
long, but it recurred frequently, and was excited by any move-
hich produced pressure on the growth, such as bringing the
rs together, or lying on his side in bed. He was not aware of
rease of pain depending on change of season or weather, and
rescence underwent no alteration of color or bulk from mental
ly excitement, exercise or elevation of temperature.

les the kelis on the breast the patient has a second on the outer
the left leg, over the head and upper part of the shaft of the
This excrescence is of the cylindrical kind (keloide cylin-
Alibert), and, like the preceding, is accompanied by its satel-
mall round tubercle, situated near its lower end, on the calf of
The cylindrical kelis measured three inches in length, and
ader at the extremities than in the middle; measuring at its
st point one-quarter of an inch; at is upper end three-eighths
ch; and at the lower end five-eighths of an inch. Its elevation
ut one line.

patient is not aware of any *cause* for this disease, either local or general; no scratch, no abrasion or undue friction of the skin, starting point. He was in good health at its first appearance, an remained so since. None of his family have suffered from any similar. His mother died of cancer of the womb at the age of sev one, having been first attacked by that disease within twelve m of her death.

A London physician, forty-one years of age, had two of these t of the cylindrical kind; one being situated on the right sho over the spine of the scapula, the other on the buttock of the side.

They first attracted his attention about five or six years ago (when the tumor on the shoulder was not larger than a horse At present it measures an inch in length, by one-third of an in greatest breadth, and has an elevation of about one line. This presents obvious indications of having originally consisted of hemispherical tubercles, subsequently united by a connecting The tubercles having been of different dimensions, the kelis is at one end than at the other, and the connecting ridge is nod near the larger end, from the presence of the third and sm tubercle.

The kelis on the buttock consists, in like manner, of two tub of unequal size joined together by a narrow ridge. The len this formation is one inch and a half, and its greatest breadth what less than three-quarters of an inch.

The color of the growths is a dull pinkish red; they are s and even on the surface, are covered by a very thin epidermi have none of the white lines of the previous case. They ar superficially, but hard, dense, and resisting, like fibrous tissue, in deeper structure, and they are strictly limited to the skin.

Their most characteristic symptom is an occasional stingin pain, compared by the sufferer to piercing the skin with a fine made red hot, and a tingling, itching sensation, after being to or rubbed, or under an increased degree of cutaneous circul such as occurs in hot weather. A vehement desire to scra awakened by the itching, but, on the whole, they give rise to pain or annoyance. In the summer they are more troublesome in the winter season.

During the last two summers, and particularly the last, the on the buttock was excessively tender, so tender, in fact, as to pain on the slightest friction, as in that occasioned by the clot walking.

A gentleman, forty-four years of age, of ordinary stature, and of full habit, by profession an actuary in a Metropolitan ance Society, had his attention drawn about eight years since, i sequence of suffering a violent itching of the skin, to a small situated on the middle of the breast. The little tumor was shaped, smooth, of a reddish color, and about the size of a split bean. From this time the itching in the tumor and immediatel rounding skin frequently recurred, more especially after any k mental or physical excitement, after taking wine, after walki upon getting warm. Occasionally there were, superadded to the pruritus, sensations of smarting, stinging, burning, and prickling, particularly on the occurrence of atmospheric changes. In speaking of these sensations, he compares them to the sudden piercing of the skin with a number of needles.

The tumor continued to enlarge gradually for the first two years; it then remained stationary, only changing with his state of health, for the next five years; and, during the last twelve or fifteen months, has been slowly diminishing in size. At present it is very slightly convex, or nearly flat on the surface, and lies across the middle of the sternum, resembling in its general form a sheaf of wheat, being narrow at the middle, and broad at either end. Its greatest length is one inch and three-quarters; its breadth, at the middle, one-third of an inch; and, at the expanded extremities, nearly one inch. It is thickest at the narrow mid-portion, where it has an elevation of one line, and from this point gradually subsides to the level of the surrounding skin.

Its color is pink, with a whitish line running longitudinally through its middle, and dividing, at its expanded portion, into four or five indistinct radiating streaks. It is, and always has been perfectly smooth and polished; and, upon close inspection, a great number of minute venules may be seen meandering from its central part to the circumference. In consequence of the tension of the skin, the prominences of the pores of the follicles are obliterated, and it might easily be mistaken for the projecting cicatrix of a deep burn. When examined with the finger, the skin is found to possess a velvety softness, beneath which may be felt a hard cord running through the middle of the tumor, and dividing in the expanded portion on each side, into four or five smaller cords, which extend like roots into, and appear to be lost in, the deeper structure of the corium. This hard cord and its terminal branches correspond with the whitish longitudinal line and its radiated streaks above described.

The principal change which the kelis has undergone in the progress of growth, is a greater amount of general elevation of the whole tumor, and a special prominence of the central cord and its radii. The patient informs us that, at the acme of its growth, it had an elevation of three-quarters of an inch at the central part. He also states, that it underwent frequent changes of dimensions, having reference to his state of health, being one while swollen, and another while contracted in size. It has never been wrinkled, nor has there been any cuticular exfoliation from the surface.

Since the date of our special inquiry into the nature of kelis, in 1851, we have seen many cases of the disease; one occupying a large extent of surface on the left breast, occurred in an American gentleman. When the tumor first appeared, it was removed by operation, and the result of the operation has been a great increase of the disorder. In another case the patient is a lady, whose chest is covered with a crop of small tubercles, twenty or thirty in number, and varying in diameter from three to six lines; and another case is also that of a lady, who has a large, flat, dumb-bell tumor on the right shoulder, and a smaller one of the same nature over the left scapula.

DIAGNOSIS.—Kelis is dissimilar to every other affection of the skin; its resemblance to a cicatrix where there has been no previous injury; its elevation; the sensation communicated to the finger, soft on the surface, and like fibro-cartilage more deeply; its manifestly fibrous structure; its scanty supply of bloodvessels; the absence of any tendency to ulcerate; these are its characteristic signs. The tubercular form is recognized by the hardness and whiteness of its little tumors, and the absence of signs of cutaneous cancer, such as dilated veins and enlarged lymphatic glands. The traumatic form is nothing more than the unseemly growth of a cicatrix, a cicatrix which, instead o remaining smooth, throws up ridges and bands and cords of whit fibrous tissue, and becomes uneven and ugly. We saw lately a littl child that had a traumatic kelis on the hip in the cicatrix of a scald and the motions of the limb are considerably impeded by the thickness and rigidity of the injured skin, and will probably remain so fo the rest of life.

CAUSE.—The cause of kelis is the development of a normal process in an abnormal position. Its essence is debility, for the change tha takes place is one of degradation of structure; it is the accumulation o a lower in the place of a higher form of tissue, of a non-vascular whit fibrous tissue, in lieu of the highly organized corium, and the stil more highly organized pars papillaris. These considerations, it i true, do not help us much to the comprehension of the nature of th cause which determines the abnormal physiological process, but they may help us somewhat in laying a sound basis of treatment. In one instance we have evidence of a diathesis; the daughter of the physician whose case is mentioned above, has her shoulders and back sprinkled over with small keloid tumors which have succeeded the papulæ of acne. In this example, we perceive that the exciting caus may be trivial; Rayer has noted the development of kelis from th cicatrices of smallpox; from a punctured wound; and Alibert from a slight scratch; while in three cases seen by ourselves, one followe a boil, another the application of a stimulating liniment to the ches and another rose upon the seat of a blister. Mr. Longmore has published two cases of kelis, one idiopathic, the other traumatic, and resulting from the injury to the skin done by military flogging; and he mentions that Dr. Maclean had seen two cases which followe flogging. In the traumatic case the tumor was an inch thick; and i that which was idiopathic, the disease formed an irregular trellis work of ridges and hollows over the whole back; while other tumors were developed on the face, on the front of one shoulder, and the lowe part of the chest, those parts of the body which were pressed by th belt and shoulder-straps being the ones chiefly affected.[1] In the Guy's Hospital Reports there is also a notice of a case which followed syphilitic ecthyma.

---

[1] Medico-Chirurgical Transactions, vol. xlvi. 1863.

Prognosis.—Kelis will sometimes undergo absorption and disperse spontaneously; but it must be confessed that this desirable change is very rare; more frequently it preserves a permanent hold on the skin, sometimes passive, at other times active and disposed to spread. Our prognosis as to cure is far from favorable.

Treatment.—The treatment of kelis offers the two usual indications, namely, constitutional and local. By constitutional treatment we may hope to modify and strengthen the structure of the skin, and bring about a change similar to that which happens in examples of spontaneous cure. The remedy suited for this purpose is arsenic, and we believe that we have seen very good results follow its use, and that of the liquor hydriodatis hydrargyri et arsenici. A protracted course of iodide of potassium or iodide of ammonium, or the bromide of potassium, may also be tried with a fair prospect of success.

Locally, steadily continued pressure would undoubtedly be beneficial if it could be attained; and frequent pencilling with the liquor plumbi diacetatis not only allays irritation, but has seemed in some instances to be of service in contracting the size of the tumor. An ointment of the iodide of lead is also suitable, with the same object. We may endeavor to disperse it by the application of the compound tincture of iodine, by compresses soaked in a solution of the iodide of potassium or ammonium, by the use of ointments containing the same salts; or by chloride of zinc, creasote, or carbolic acid.

The destruction of the tumors has been attempted with the potassa fusa, but with no good results; and there is always the danger in employing irritant remedies, of their increasing instead of diminishing the evil, by provoking a more rapid spread of the disease. A similar remark applies to operation with the knife; the knife removes the tumor, but it does not remove the diathesis; and there is every probability of the cicatrix of the wound being converted into a keloid growth. Dr. Warren reports a case operated on by the knife in which the disease broke out, not only in the cicatrix left by the wound, but also at the points through which the ligatures had passed; so that, as the result of the operation, there were seven tumors instead of one. Nevertheless, there is the hope that at some period or other of the disease the diathesis may have ceased, and then, if the patient were very desirous for an operation, it might be conscientiously attempted. As a rule, however, the less the tumors of kelis are interfered with the better; and, in some cases, with all the disposition for surgical assistance on the part of the patient, an operation would be useless, in consequence of the extent of surface covered by the morbid growth.

SCLEROSIS DERMATOS.

Sclerosis, or induration, may present itself in several forms in relation with the cutaneous tissues, in one instance affecting the derma proper, scleroderma or sclerosis corii; in another, the subcutaneous tissues, sclerosis telæ cellularis et adiposæ; and besides, manifesting itself as a congenital disorder in scleroderma infantile.

A remarkable case of *sclerosis corii* lately presented itself to our

notice in the instance of an elderly lady; the part of the body affe
was the leg; and the skin for the extent of five or six inches w
dense as horn or cartilage, and formed an unyielding clasp ar
the limb; the tissues above and below the clasp were puffed
swollen, and the foot was enlarged and tender.

SCLEROSIS TELÆ CELLULARIS ET ADIPOSÆ was shown in the ca
a lady of thirty, who after some degree of præcordial suffering,
sisting principally in a sense of weight and nausea, was attacked
slight erythema of the face, neck, and shoulders. The rednes
inconsiderable and but slightly pruritic, but there existed an un
fortable feeling of weight, or pressure and stiffness, accompanied
a little swelling and a sense of rigidity, which interfered wit
motion of her jaws and neck. We first saw her a few weeks
the commencement of the attack, when the erythema had sub
without desquamation, and when the more striking symptoms c
affection were paleness and a yellow tinge of the skin, with a
tion to the touch of thickening, solidity, and hardness of the ski
subcutaneous cellular and adipose tissue. It was clearly eviden
the density of the integument was not due to œdema; and alth
there was some degree of pitting on pressure, it was the kind of p
that would be produced by pressure on a skin of lard rather
upon a portion of skin infiltrated with serous fluid. When the
was pressed upon the skin it left a pale impression, which very s
recovered its normal color. The lower border of this altered
could be distinctly traced with the finger, and gradually merged
the healthy integument.

The pathological changes above described are doubtless su
usher in the boucnemia tropica, which in a mild form is calle
"rose," and appears to be an erythema or erysipelas of the integu
resulting in thickening and condensation. The "rose" is met wi
Bermuda, and the boucnemia farther south, in Barbadoes.

BOUCNEMIA TROPICA.

Syn. *Elephantiasis Arabum; Barbadoes leg.*

BOUCNEMIA is an hypertrophy of the skin, not limited to one
parts, as the epidermis, the pars papillaris, or the corium, but in
ing the entire integument, together with the subcutaneous tissue
in general the entire cellular tissue of the affected limb. It occu
the most part in the lower extremities, and not unfrequently i
scrotum, and, as its name implies, is a disease of hot climates,
met with in the East and West Indies, in Africa, in China, and i
Polynesian Islands of the South Pacific Ocean. Its prevalence i
of the West India Islands, Barbadoes, has gained for it the na
the "Barbadoes leg," while in the East it is termed the "Cochin

Boucnemia attacks the foot and ankle, and gradually ascend
leg, until it involves the entire limb; and sometimes it invades
legs. The affected parts grow to a prodigious size; the thick
brawn-like integument overlaps and obliterates the toes; the in
ment of the leg forms a thick fold, which overhangs the ankl

foot, and conceals the latter to a greater or less extent; and the limb is so altered from its original shape, and so deformed, as to have more the character of an elephant's leg than of that of a human being. This resemblance is all the greater from the corrugated, rough, and discolored appearance which the epidermis presents, and very naturally suggested to the Arabian physicians the designation *dal fil*, the elephant disease.

The European translators of the works of the Arabian physicians conceived that the term *dal fil* was intended to signify the disease familiar to themselves, and described by the Greeks under the name of elephantiasis, and named it accordingly. Subsequent writers, however, discovered the difference of the two diseases, and distinguished them by the name of elephantiasis Arabum and elephantiasis Græcorum; and thence has resulted a considerable amount of confusion, that for a long time has complicated the history of these diseases, and is not yet entirely cleared away. We, however, diminish the difficulty very materially when we call the elephantiasis Græcorum by its proper name, LEPRA, and elephantiasis Arabum by the more appropriate name of boucnemia.

The characteristic features of boucnemia are the prodigious enlargement of the limb, due to augmented growth and infiltration into the tissues, and a coarseness and degradation of structure of the tissues themselves. The patients whom we meet with in this country suffering under the disease, are either natives of a hotter climate or have resided in warm climates for a considerable time. We have, however, seen one case of this kind of hypertrophy affecting the scrotum, in a gentleman who had never left England. Another case, which invaded the entire lower extremity of one side, the limb being three times the size of that of the opposite side, was imported from Australia; and recently we have advised an English gentleman affected with this disease in the foot and lower leg, who had resided in China. The swelling began eighteen years previously, after a sprain of the ankle. It was unattended with pain, but had on two occasions been the seat of ulceration, which for the time had greatly diminished its bulk, by giving exit to the infiltrated albuminous fluid. In the cases which have come under our inspection, there has been no evidence of disease of veins or lymphatics, or any enlargement of lymphatic glands; but swelling in the course of the absorbents does frequently take place accompanied with enlargement of a gland.

In its pathological aspect boucnemia presents the characters of a chronic cellulitis sometimes assuming an erysipelatous type. In general it is insidious in its origin, and being unattended with pain, has made some progress before it is observed; the first sign of its existence being a feeling of tightness and weight, with swelling. At other times it makes its beginning like a simple erysipelas, followed by œdema. A mild form of boucnemia occurring in Bermuda is called "the rose," from its erythematous character, and from its never reaching the full development of the disease as met with in Barbadoes and more southern countries. It is very slow in progress; remaining stationary for a while; and every now and then awakening to fresh activity and assuming a periodic character. These periodic attacks are accompanied by some febrile action, and have given rise to a popular belief in the association of the disease with intermitting fever; one of the popular titles of the affection in Barbadoes being "fever and ague." In Barbadoes it has also been considered as due to interrupted function of the lymphatic system, and has been regarded as a lymphatic glandular disease.

Excepting during the moments of its febrile exacerbations boucnemia is unaccompanied by symptoms of constitutional disturbance, an is consistent with a good state of general health. It occurs for th most part at and after middle life, and is more common in the mal than the female. The "rose" of Bermuda is most frequent in middl aged females of sedentary habits, and especially in such as are the subjects of dyspepsia and gastric derangement. Sometimes the fever of bou nemia is attended with a more severe exacerbation of the cold, ho and sweating stage, and sometimes with delirium. The local uneasine may be a feeling of heat and throbbing, and sometimes only of itching

DIAGNOSIS.—Boucnemia when fully developed is unlike any othe affection of the skin; in an incipient stage it might be confounde with that œdematous condition of the integument and subcutaneou cellular tissue which goes by the name of "white leg," and whic originates in inflammation of the veins; indeed there is some analog between the two diseases, and boucnemia may in its essence be a "whit leg" of endemic or sporadic origin.

CAUSE.—Boucnemia must be referred to endemic or sporadic cause peculiar to hot climates, but occurring exceptionally in those of milder temperature. It may be excited by checked perspiration o excessive exertion.

PROGNOSIS.—Our hopes of cure must be very limited; the diseas is very troublesome and annoying, but not in its nature of a fatal tendency. Nevertheless, by inducing debility and exhaustion, and interfering with progression, it would eventually undermine the health.

TREATMENT.—Removal from the country, where the disease i endemic, is an important element of cure; but our experience of th disease does no more than warrant the suggestion of means founde upon general principles; for example, the iodide of potassium o ammonium, arsenic, mercury, with local pressure and position, the us of evaporating and saturnine lotions, frictions with an ointment of th biniodide of mercury; and sometimes a blister. We advised ou patient, above referred to, to commence his treatment with a course o Zittmann's decoction. Some benefit might also be anticipated from prolonged course of tonics with the bichloride of mercury. But an plan of treatment that may be determined upon must be continue steadily for a considerable length of time. Time in this, as in man other diseases, will be an important medicine in the cure. Ligatur of the main artery of the limb has been practised in several instance with success.[1]

---

[1] *Vide* Paper by Mr. Thos. Bryant, read at the Med.-Chirurg. Society, June, 26, 186 Also cases by Dr. Carnochan, Messrs. Statham, Butcher, and Alcock, and Dr. Fahre

Those prodigious enlargements of the scrotum that sometimes find their way from China into our hospitals in this country, have in several instances been submitted to the knife; and it is surprising how much the Chinese constitution will bear in the way of surgical operation.

ATROPHIC AFFECTIONS.

ATROPHIA CUTIS, affecting the entire body, is a very rare affection, in a partial form attacking a limited extent of surface, or occurring in cicatrix-like lines, it is not infrequent.

In *general* atrophia cutis the skin becomes thinned and stretched, and seems as if it were too small for the body which it contains. The thinness and stretching are most remarkable at the apertures of the body and in the extremities; the eyelids look too small to cover the eyes; the nose is pinched; the ears curled up; the teeth exposed by the contraction of the lips; and the cheeks are drawn against the jaws so as to produce a cadaveric expression of countenance. The skin of the neck in like manner is stretched, and the fingers and toes are shrunken, pointed, white, and not unfrequently ulcerated at the tips. The process is so gradual that the ends of the last phalanges make their appearance beyond the skin without much previous pain. 'The bone crumbles and comes away, and after a while a fresh piece is protruded, until an entire phalange may be expelled through the opening. Often, also, the tendons contract, and the fingers are more or less bent.

The pain accompanying these pathological phenomena is generally very trivial; there is always great coldness, with numbness; some degree of aching; then a little pus appears at the ends of the fingers; next a chronic ulceration of no apparent moment; and then the ragged end of the bone. These phenomena remind us very strongly of elephantiasis anæsthetica, and suggest the idea that this curious affection may be a remnant or vestige of the ancient leprosy.

A remarkable case of atrophia cutis fell under our observation in 1849; the patient had for some time been under the care of Nathaniel Jarvis Highmore, of Bradford, Wiltshire, and that gentleman, in a letter introducing the patient, observes: "Mrs. L——, married, at the age of twenty, her health previously, and for twelve months after, being good. About May, 1842, she became, from family circumstances, the subject of great mental anxiety, weak, poorly, and complained of severe pain in the left side, immediately below the heart; the skin in a few days became dark, discolored in patches, and swollen, especially the hands and feet. After a short time the skin about the throat and chest apparently contracted, giving the sensation of a person tightly grasping it." Some months later she fell into a state of "depression bordering on mania; she was sleepless, and refused either to speak or eat." Both hands and feet were at this time much swollen, but she retained perfect command over them; later, however, they became stiffened. Vapor baths were administered to her with decided injury, and equally injurious was a course of mercurial medicine. Dr. Highmore first saw her in 1846, at which time she was still under the influence of mental anxiety. She became depressed from the slightest cause; her hands and feet were always cold, and if she were excited, they, as well as her nose, presented a purple tinge. The skin of the arms, face, throat, chest, and neck, was hard and contracted, and of a dark olive color.

When this patient appeared before us she was extremely emaciated, and her skin so much contracted as to appear too small for her body: her lower eyelids were drawn down, exposing more of the eye tha usual; her features were lengthened, and the lower lip had falle away from the mouth, showing the teeth and gums. Her finger were bent and contracted, and there were several sore places upo them, occasioned by ulceration; the sensibility of the skin was deadened, and her movements were effected with difficulty. This patie died the year following of acute bronchitis, "no change having take place in the appearance or functions of the skin."

Another example of atrophia cutis is at present under our observ tion in the instance of an unmarried lady, aged thirty, who had sudden seizure of rheumatism six years back, followed by extrem cachexia and debility, but without any organic disease or any sufficient explanation of the extreme state of exhaustion and weakne into which she fell. At the present time she has recovered he strength in some degree, but is still thin and weakly; her featur are pinched, and the skin of the face is sprinkled over with sma crimson blotches that suggest the idea of purpura. Closer examin tion, however, shows that these blotches result from a state of atroph of the papillary layer of the corium, and the substitution for that laye of a plexus of varicose capillaries.

Her hands and feet are always cold, the fingers attenuated; the li tle fingers of both hands bleached and shrunken for half their lengt and hard and insensible to the touch. The ring fingers are beginnin to undergo the same morbid process, and together with the little fi gers show a tendency to ulceration at the extremity. The ulceratio begins without any suffering; there is a sensation as if the skin wer pricked. it is sore for a week or two, the skin ulcerates slightly, an subsequently, heals slowly.

Partial atrophia cutis is illustrated in the following case occurrin in a young lady of twenty. She is small for her age, of weakly co stitution, subject to cold hands and feet, and to circumscribed conge tions on the fingers which have been regarded as chilblains. Th little finger of one hand is bent from contraction of the fibrous tissu of the joints, much smaller than natural, and tapers at the extremit to an obtuse point. The skin of the finger is smooth, hard, and pal the bones seem to have undergone partial absorption so as to redu their bulk; and at the extremity is a slight superficial ulceratio apparently resulting from the pressure of the skin against the end the phalanx.

ATROPHIA CUTIS LINEARIS.—Partial atrophia cutis more frequentl assumes a linear character than the general form already describe Sometimes the linear atrophy results from the disorganization of nerve, and the affection of the skin follows the line of distribution the nerve; at other times it is the consequence of pressure, as of distension, which occasions a partial disruption of the corium, or pressure of the opposed borders of the integument corresponding with the lines of motion of the skin. The latter causes give rise to the cicatrix-like lines which are seen after parturition, or the subsidence of obesity; but are also met with occasionally in situations where neither of those causes is present.

We have met with several examples of linear atrophia cutis from disorganization of a nerve, and most frequently on the forehead, where the line has taken the course of one of the branches of the supraorbital nerve. The first symptom is generally a faint white line, along the borders of which the normal redness of the skin is a little increased; by degrees the white line becomes more evident, broader, and depressed, and the distinction between it and the bordering sound skin more obvious. Later, the sensibility of the affected skin is lost, the skin is withered, and a reparative process, the absorption of the damaged skin, is commenced; and as a result of the latter process, the adjoining parts of the healthy skin are drawn together, and nothing remains but a deep linear groove resembling the scar of a sword wound.

Linear atrophia cutis from parturition is met with in the integument of the abdomen, and results from a gradual yielding and disruption of the fibrous tissue of the corium. It occurs also on the mammæ from the enlargement of the glands during pregnancy and lactation. Similar linæ atrophicæ in the integument of the abdomen are produced by distension caused by accumulations of fluid in the ovaries, or peritoneal cavity, from enlargement of the viscera, or from obesity. From the latter cause, and from the pressure induced by the movements of the body, they are not unfrequently seen on the thighs, on the hips, and around the shoulders.

In their early development these atrophic lines are accompanied with erythema; at a later period they are smooth, and have a bluish and glistening appearance. If they be examined with the finger, they will be found to correspond with a fissure in the subcutaneous cellular and adipose tissue; and in fat persons this fissure of the tissue gives to the subcutaneous fat a lobulated character. Dr. Wilkes describes these linæ atrophicæ in the Guy's Hospital Reports for 1861, and they are well illustrated in a plate accompanying his description. His cases were those of young persons in whom the disease commenced at the age of thirteen, and was not referable to obesity; and he makes the important practical observation, that the most common cause of these lines in women being pregnancy, we are apt to consider them under the name of lineæ gravidarum, as one of the proofs of a foregone pregnancy, whereas it is clear that they may be produced independently of that state. In one of our patients, where the lines were developed on the lower part of the abdomen, and were identical in character with the lineæ gravidarum, the subject was a man.

Diagnosis.—The obvious signs of atrophy already described distinguish this affection from the generality of cutaneous diseases; but from the atrophy which accompanies elephantiasis the distinction i not so easy. Indeed, we ourselves have sometimes doubted wheth these affections might not be classed with elephantiasis anæsthetic A similar state of the skin is occasionally seen, which is associat with a tubercular infiltration resembling that of elephantiasis tub culosa; and this latter we have not hesitated to group with elephan asis, under the designation of morphœa lardacea.

CAUSE.—Of the predisposing cause of atrophia it is difficult to ma a suggestion; the general form is usually associated with an extre state of nervous debility; and the exciting cause of the partial linear kind is sometimes traceable to violent muscular efforts, su as accompany spasmodic sneezings and spasmodic cough.

PROGNOSIS.—The general form of atrophia cutis is grave; the co stant irritation which it keeps up tends to weaken and exhaust t constitution. The linear form of atrophy is not serious, and we ha seen it undergo spontaneous cure.

TREATMENT.—Atrophia cutis being more constitutional than lo in its nature, that is as regards its general form, we must have recou to tonics, and last, and often best among these, to arsenic. We rep here what we have already said before, that arsenic is a special c taneous tonic, and therefore a very appropriate remedy where loss nervous power of the skin is specially concerned.

The local treatment must consist of moderate stimulant applicatio such as the unguentum resinæ, or ointments containing mildly stim lant balsams. We have also found camphor cerate and a weak so tion of nitrate of silver useful adjuvants. In cases of linear atroph we have pencilled the part with the acetum cantharidis with advanta and have applied liniments containing chloroform.

CHAPTER XIV.

ALPHOUS AFFECTIONS.

ALPHOS, the lepra alphos of the Greeks, is one of the three vitiligo or spotted affections of Celsus. "It is called alphos," he says, "wh it is white, rough, and dispersed, resembling drops sprinkled on t skin; sometimes the spots have greater breadth than mere drops, a are apt from time to time to enlarge their dimensions." Willan adopt the term "lepra" to distinguish this disease, and, at the same tin employed the word "psoriasis" for one of its forms, associating t two words by this means; but, as this association is attended with t inconvenience of attaching two independent terms to the same disea we proposed, in an early edition of this book, to retain the word lep as typical of roughness and scaliness; and transfer the term psorias the representative of itchiness, to the chronic and squamous stage psora, that is, eczema, to which, we believe, it more correctly belon

Our colleagues of Germany and France took a different view of the subject; Hebra and Hardy have preferred the term psoriasis, and reject that of lepra as appertaining to the ancient leprosy. The question therefore arises: Which is the more correct, and, at the same time, the most convenient title for the affection? Is it lepra? Is it psoriasis? Or, Would it be better to discard both, and adopt some other and independent term? We prefer the latter alternative, and propose to restore the specific term "alphos," by which the disease was known to the fathers of medicine. This term was given to the disease by the Greeks, was adopted by the Latins, and was only disturbed by the confusion of literature which occurred during the dark ages. Lepra alphos is undoubtedly the most correct appellation of the disease; but, as the genus lepra includes besides lepra melas and lepra leuce, it would contribute materially to the clearness of the subject to reject the word lepra, as associated with alphos, and retain it as the representative of melas and leuce, the symbols of the true leprosy. Psoriasis, on the other hand, is decidedly incorrect as applied to lepra alphos, because psora and alphos are perfectly distinct diseases; and psoriasis is nothing more than a congener of psoria or eczema, and as such we have employed it. Therefore, with the significations now proposed, the three terms, alphos, lepra, and psoriasis, would represent: the first, the lepra alphos of the Greeks; the second, the true leprosy; and the third, the chronic and squamous stage of eczema. We maintain that, whether these significations be accepted or not, they approach more closely to a correct definition of the diseases than the terms at present used in Germany and France; and we record our own sentiment on the subject in the words of an able writer, Mason Good: "It will not be the present author's fault if the correction, so generally called for in the case before us, should be postponed to another age, or the error complained of be chargeable on future nosologists."

ALPHOS.

Syn. *Lepra*, Willan; *psoriasis*, Hebra, Hardy, Devergie; *lepra alphos*, Greeks; *vitiligo albida*, Celsus; *boak*, Hebrew; *lepidosis lepriasis*, Mason Good; *dartre squammeuse*; *dartre furfuracée arrondie*; *dry tetter.*

Alphos (Plate XII.) is an eruption of white, round, and slightly-raised spots, varying in size from two lines to an inch or two inches in diameter, symmetrically dispersed over the surface of the body, but met with especially on the elbows and knees; and sometimes forming continuous patches of irregular figure and considerable extent. The whiteness of alphos is due to a small mound or scale of morbid epidermis formed on the surface of the spot; its roundness and elevation are the consequences of its origin from a tubercle, or from a cluster of tubercles; and the size of the spot is dependent on the presence of a single tubercle; of a cluster or of an aggregation of clusters of tubercles. It is remarkable for its persistence and tendency to recurrence, but is not contagious.

At its earliest appearance the pathological e [illegible] 'phos is a small flattened papule (alphos punctatus vel papulosus) which oc the circumference of the mouth of a follicle; the papule is of red color, and one line in diameter;[1] and in a short time enla the diameter of two, three, and four lines. Sometimes it retai latter size permanently and constitutes the form of alphos *guttatus;* at other times the redness spreads from the base primary tubercle, a circle of pores around it are involved, a tubercles developed at the apertures of these pores become fus one continuous elevated border. The patch has now attain diameter of five or six lines, is circular in figure, has a rounded which sometimes exceeds in elevation the central or primary tu and has a tendency to peripheral growth; this is the circinat of alphos; in other words, alphos vulgaris.

Alphos, therefore, may exist as a single tubercle; as a clu tubercles more or less completely fused into a single circular n patch, ranging in diameter from half an inch to two inches; or present an aggregated character, and constitute a widely-spread composed of independent tubercles, connected by a common matous base; the patch being irregular in its outline, and cov large surface, sometimes an entire limb: this is alphos diffusus. differences in degree of development of the eruption have refer the constitution of the patient, to the tone of the skin, or to the of the disease; but their chief interest consists in their being th upon which are founded the varieties of the disorder. An a development of the eruption at the papular stage constitutes an punctatus vel papulosus; its advance to the condition of an i tubercle is the alphos guttatus; a cluster of tubercles, blended single homogeneous patch, of moderate size and circular form, is circinatus vel vulgaris; while an aggregation of tubercles cov large surface, without fusion of mass, and with an irregular bou is alphos diffusus.

This eruption presents some variety in its degree of ele sometimes the elevation is very slight, as in alphos papulosus, a pityriasic form of the disease, occasionally met with; while ordinary forms the prominence of the tubercles reaches to about The scale or crust also exhibits differences, both in thickne whiteness; these properties of the scale being due to the acti morbid cell-formation, and being greater in proportion to the of imperfection of the structure of the cells. The most morbi dition of the scale is evinced by a laminated and porous stru the lesser degree of departure from the healthy standard, yellowish and horny foliation of ordinary epidermis. In alph cinatus, which creeps on gradually by its circumference, the becomes imbricated, and has a remarkable character, being den yellowish in the centre, and laminated and snowy towards the c ference, often assuming a frothy lightness of appearance with a brilliancy. In alphos guttatus the scale forms a little white each of the tubercles; and the scales of alphos diffusus are an aggregation of crusts of this smaller kind, accumulated often in astonishing numbers.

---

[1] The prominent papule of cutis anserina measures half a line in diar the base when round, and three-quarters of a line by half a line, when elli figure.

When alphos is in process of cure, the so-called retrograde metamorphosis of the eruption, the scales loosen and fall off and cease to be reproduced; leaving a smooth, red, and slightly raised surface which gradually subsides, and eventually returns to the natural tint and texture of the skin, without a trace of its previous existence; in the guttated variety the little elevations or tubercles sink in mass to the level of the skin; in the diffused kind, they sink here and there in the midst of the irregular patch, and form so many clearings, which go on enlarging in dimensions until the patch is wholly removed. The mode of disappearance or *dispersion* of the circinate kind is, however, more peculiar; the patch subsides in the centre, where the skin is restored to its normal state, while it runs on by the circumference, and so forms a ring of variable size; then the ring gives way, and the patch is reduced to one, two, or more segments of the original circle. When two rings join by their circumference they form a figure of 8; a cluster of three produces the outline of a trefoil, and when numerous rings are thus connected in the state of dispersion, they give rise to a variety of irregular serpentine figures, which have suggested the term alphos gyratus.

Alphos has no constitutional symptoms, and scarcely any local symptoms. It is consistent with a perfect state of health of the individual; but as the sufferers from alphos are not protected from other diseases, the eruption may be rendered irritable, and become inflamed from the presence of different disorders; for example, gout or eczema. In gouty persons alphos will frequently become red, tumid, and excessively itchy; alphos erythematosus. And in eczematous subjects the eruption may become the seat of eczematous congestion, and assume the characters of the fissured, the ichorous, and the incrusted forms of eczema. These symptoms, however, must not be regarded as belonging to alphos itself, but as being the appurtenance of the disorder with which it is complicated. Alphos generally gives rise to no inconvenience whatever beyond the vexation of its appearance, and some little itching arising from the more active circulation attending its development and growth, and from the accumulation of the scales upon the skin; the itching being apt to be increased by the reaction of alternations of temperature, and particularly by the heat of exercise.

When alphos disappears from the skin, it not unfrequently leaves melasmic stains on the spots occupied by the patches; and at other times the skin around has become darkened, while the seat of the patches is bleached. This melasmic discoloration is usually attributed to the stimulant action upon the skin of the arsenic used in the treatment of the disease; and in many instances, no doubt, this explanation is correct. It is evidently so in the case of diffused melasma with bleached patches; but we have noted cases in which melasmic stains were present, and where no arsenic had ever been administered. In these latter examples the congestive energy of the skin had supplied the place of the stimulus attributed in other instances to arse cal action.

The principal VARIETIES of alphos are three in number, namely

Alphos circinatus,
Alphos guttatus,
Alphos diffusus.

To which may be added as accidental forms, alphos papulosus, alp pityriasicus, and alphos gyratus; and certain local forms; for ex ple, alphos capitis, alphos faciei, alphos manuum, and alphos art lorum.

ALPHOS CIRCINATUS VEL VULGARIS[1] (Plate XII. A B), the le vulgaris of Willan, the psoriasis vulgaris of most modern auth and the psoriasis mummularis, discoidea, circumscripta, and orbicul of Hebra, is the common form of the disease. The patches are veloped in the semblance of circular disks, of an average diamete one inch; they enlarge by the circumference, and in process of subside at the centre, and are converted into rings (a. annulat Alphos circinatus is the most strikingly-marked form of the dise in it, the circular figure, the depressed centre, the raised border, the laminated and porous scale are best exhibited. It is met with the fleshy parts of the body, as of the trunk and limbs; while on elbows and knees, where it is constantly present, it loses its circ figure, and becomes irregular and diffused.

ALPHOS GUTTATUS[2] (Plate XII. C), the lepra alphoides of Willa rare as compared with alphos circinatus; it presents the tuberc type of the disease in a persistent form, has a thinner and less s ficially developed scale than the preceding, and no tendency to g by the circumference and subside by the centre; on the contrary, summit is always the most prominent part of the eruption, and average diameter of its tubercle, two lines.

Alphos guttatus is commonly intermingled with patches, compo of several tubercles, which approach in size the smaller disks alphos circinatus; it is for the most part dispersed over the trunk the body, and sometimes on the limbs. In a case of alphos gutta now before us, there are about eighty tubercles and patches, scatte over a surface as large as the hand; of this number, about one-th are isolated tubercles, from one to two lines in diameter; one-half small patches, three lines in diameter; while the remainder are cl tered patches, varying in size from four lines to six and seven. T function of the tubercles and patches is, as it were, consumed in production and reproduction of thickened and morbid epiderm which is cast from time to time in the form of scales; in other wor their action is vertical and not peripheral. If there be any erupti present on the elbows and knees, it presents the diffused character, in alphos circinatus.

---

[1] A good example of alphos circinatus, under the name of lepra vulgaris, will found among our portraits of diseases of the skin, Plate XIII. T.

[2] Portraits of diseases of the skin; Plate XV. A M, exhibits a good exampl alphos guttatus, under the name of psoriasis guttata.

Alphos diffusus[1] (Plate XII. H I) is the lepra inveterata of Willan, and is remarkable for the large size of its patches, often covering an entire limb, and in rare instances the whole body (universalis), and for an obstinacy of character which has gained for it the title of inveteratus and agrius. Unlike alphos circinatus, it has no tendency to circularity of form, although bounded by a circumscribed border; while in structure it consists of a multitude of the typical tubercles of alphos closely assembled together, sometimes touching, and frequently blending by their bases. The scales of alphos diffusus often attain considerable thickness, they fall in a shower when the eruption is brushed by the hand, and may be collected in amazing quantity from the bed of the patient after a night's rest. This form of the disease is more frequently complicated with bleeding cracks and fissures, and also with eczema, than the other varieties.

On the convexity of the elbows and knees, alphos commonly assumes the diffused form with a circumscribed border, although the general form as developed elsewhere may be circinate or guttate.

Alphos papulosus, vel punctatus, is alphos arrested at its papular stage, when it exists as a crop of papules developed at the apertures of the pores of the skin, each papule being surmounted by a white scale.

Alphos pityriasicus, like alphos papulosus, is an imperfectly developed form of the eruption, in which the elevation and thickening of the skin are absent, and the squamæ small and imperfect. Such cases must be regarded as presenting an aberration from the natural standard; but they are not very uncommon. Alphos faciei commonly presents this character.

Alphos gyratus, as we have already described, is an accidental combination of the rings of alphos circinatus, occurring during the dispersion of the eruption, and assuming a more or less complicated serpentine arrangement; the figures are never properly gyrated.

Alphos capitis.—Alphos is not unfrequently met with on the hairy scalp, and covers the head more or less extensively, showing a red margin along the forehead, temples, and nape of the neck, sometimes extending to the ears. It commonly presents the diffused form; the scalp is thickened, very itchy, and throws off an abundance of white scales, but the hair is not altered. Alphos capitis rarely exists independently of the presence of the eruption on other parts, particularly on the elbows and knees; but the general eruption may be insignificant as compared with that of the head.

Alphos faciei.—As a general rule, it may be said that alphos never occurs upon the face; but there are occasional exceptions, and the above designation is intended to record the exception. On the face the patches are usually flat and very little raised, and generally present the characters of alphos pityriasicus. They occur for the most part on the forehead and cheeks, and are always associated with eruption occurring on other parts of the body.

---

[1] Portraits of diseases of the skin, Plates XIV. V. XVI. A O, alphos diffusus is represented under the names of psoriasis vulgaris and psoriasis inveterata.

ALPHOS MANUUM indicates another exceptional seat of the eruption, the back of the hands. We have seen it also once or twice on the palm of the hands. In this, as in the generality of the varieties, the eruption is met with elsewhere, and notably on the elbows and knees.

ALPHOS UNGUIUM illustrates a more common seat of the disease, namely, the matrix of the nail, where it destroys the normal secretion and growth of the horny tissue, and causes the separation of the nail from the derma, and its subsequent fall. We have a patient under our care, a young lady, who, besides general alphos, also suffers with alphos faciei, dorsi manuum, et unguium; the existence of alphos of the nails must generally be regarded as a serious aggravation of the affection, and indicates an obstinate form of the disease. The nails of several of the fingers usually suffer, rarely the whole, the horny tissue is altered, it becomes opaque, discolored, and brittle, and at an early stage, a tubercle of alphos distinguished by a yellowish color and transparency may be seen spreading beneath the nail.

ALPHOS ARTICULORUM reminds us of the special propensity of this eruption to attack the convex side of the elbows and knees. It is very rarely absent from these regions when it exists elsewhere, and not uncommonly it lingers on them when it has disappeared from the rest of the skin, or it is sometimes limited to these joints and has never appeared on any other part.

Willan describes a *lepra nigricans*, which seems to be nothing more than a lividity of color of alphos circinatus, due to cachexia; it is also probable that some forms of centrifugal syphilitic tubercle have been included under this head. At the best, it is a mere alteration in the color of the eruption, without any difference of pathological structure, and we have therefore thought it well to omit it from consideration as a variety of the disease.

A *lepra syphilitica*, the synonym of alphos syphiliticus, has also been described; but the term is incorrect; alphos is essentially distinct in its nature and manifestation from tubercular syphiloderma, to which the above name has been applied. The error has arisen from a similarity of appearance; syphiloderma often presents a tubercular character, spreading by its circumference, subsiding in the centre, and covered by a thickened epidermis in the state of desquamation; but the antecedents and accompanying features of the disease are altogether different.

DIAGNOSIS.—Alphos is distinguished from other cutaneous diseases by its white, roof-like, porous, and often laminated scale, surmounting and more or less concealing a dull red tubercular base; and sometimes when it has been scratched, marked around the circumference with a blackish concretion of desiccated blood. The only eruption with which it can be confounded is a tubercular and non-ulcerative form of syphiloderma. In a case of doubt we may be guided to the truth by the constitutional condition of the patient: if the eruption be syphilitic, there will have existed some foregone symptoms of that disease, and the patches on the elbows and knees, so characteristic of ought to be productive of benefit; we have seen some cases in which we believed that a better effect was produced than when the solution of arsenic was administered alone, and especially in cases of long standing in which arsenic has been taken by the patient for years. But we have never exceeded the dose of five minims three times a day. Rayer has carried the dose as high as fifty, and a hundred and fifty minims daily. But Hebra, who began with four minims, and ascended by degrees to thirty in the day, found that after he had exceeded fifteen minims the dose, given three times a day, he produced disorder of the kidneys, with dark colored urine, albuminuria, and subsequently hæmaturia. Hebra did not succeed in obtaining any good results in the cure of alphos, and he suggests that the cures by cantharides, reported by Rayer, may have resulted from the concurrent use of sulphur baths, an useful remedy, particularly when the sulphuret of lime is employed.

The hydrargyrum corrosivum sublimatum, together with mercurials in general, Hebra thinks useless, and believes that supposed cures of this eruption by these means were in reality cures of syphilitic eruption. Iodine and the iodides, and cod-liver oil, he declares to be equally valueless.

Among specifics for alphos Hebra was induced to make trial of a Brazilian plant, the *hura braziliensis*, which has obtained a reputation for the cure of leprosy and syphilis. This remedy is prepared in the form of an expressed juice called assacou, of which the dose is half a drachm daily; a tincture of the assacou, one drachm for the daily dose; and a decoction of the fresh bark, of the strength of one ounce to six ounces of water. It produces vomiting and diarrhœa to such an extent that the Brazilian physicians administer it every fourth day only, keeping the patient in bed in the meanwhile and on invalid diet; but although violent in its action the medicine occasions no after ill effects. Used for some weeks or months, the eruption disappears, but does not fail to return when the remedy is omitted; and its curative influence is due, according to Hebra, to a suspension of nutrition of the skin, similar to that which causes the removal of alphos when it is brought about by active constitutional and depressing disease.

Tar was once a favorite remedy for alphos, and is administered in capsules and pills. When liquor potassæ is given, the dose is half a drachm three times a-day in some bitter infusion, in infusum dulcamaræ, or in beer; and the dose of diluted nitric acid is one to two drachms in sweetened barley-water three times a-day, an hour before meals.

LOCAL TREATMENT.—While the constitutional treatment has for its object the alteration of a diathesis, the local treatment is intended to soften and remove the scales of morbid epidermis, and stimulate the tissues of the corium to a more healthy action. A convenient means of effecting this object is a solution of potash soap, with tar and alcohol. This should be applied at bedtime with a moderately stiff brush, and washed off in the morning with soap; or if a more active stimulus be needed, the solution may be laid on more thickly, and covered with a piece of linen, and kept bound to the knowledge of its stage and apparent activity; small in size, and itchy in an early stage; dense and thickly coated with scales in its most chronic form; and orbicular or annular at its period of decline.

TREATMENT.—In simple or uncomplicated alphos there is commonly no question of regulating the digestive organs and general health; the specific treatment may be commenced immediately, and the one reliable internal remedy is arsenic. Where, however, there is any disturbance of the health, or any complication such as gout or eczema, the complication must be removed in the first instance, before the specific treatment is begun. It will usually be found that with the removal of the complication the eruption will be benefited, and the patient may be led to hope that the eruption is in process of cure; but the physician knows full well to what the improvement is due, and does not permit himself to be so easily deceived.

The best form for the administration of arsenic is the liquor arsenicalis, or Fowler's solution. Other good forms are the liquor sodæ arseniatis, or Pearson's solution; the liquor ammoniæ arsenitis; the liquor arsenici chloridi, or solutio solventis mineralis of de Valangin, and the triple solution of Donovan, the liquor hydriodatis hydrargyri et arsenici. The dose of the alkaline solutions is two minims to five; of the acid solution, four minims to ten; and of Donovan's solution, ten minims to thirty, three times in the day. For many years we have been in the habit of prescribing Fowler's solution according to a formula which we call the ferro-arsenical mixture;[1] and of this mixture the dose is one drachm three times a-day, and taken in the middle of a meal. The patient should be furnished with a minim measure, and after measuring the dose, he should drink it pure, out of the measure. The reasons for these instructions are, that where a medicine is to be taken for many months, and three times every day, it is important that it should be as agreeable in taste as possible, and also that it should be administered in the smallest dose practicable; again, a small quantity is less likely to nauseate the stomach than a larger one. Secondly, by taking the dose in the middle of the meal it is secured a more thorough admixture with the food, and it is less likely to be brought into direct contact with the mucous surface. We may add, that the experience of many years has convinced us that this is the best, and therefore the only method according to which this very important remedy should be used.

In administering arsenic in any form we prefer to begin with a small dose, say two or three minims, to test the susceptibility of the patient to our remedy; and if we find no resulting inconvenience, we can raise it by degrees; but in few instances will it be found necessary to increase the dose beyond five minims. We believe that arsenic operates its healing effects by time rather than by quantity; at any rate, it is clear that in the treatment of alphos it must have time; and if we nauseate the stomach by too large doses given at first, we frustrate our own intentions, namely, of applying a chronic remedy to the cure of a chronic disease. If a stomach be intolerant f arsenic, it is shown at the commencement of treatment, and then e must diminish our dose or suspend our treatment for a while; here there is no intolerance of the remedy, but where, after a time, ay several weeks, it shows signs of disturbing the functions of the tomach or of the nervous system, a state usually referred to the umulative effects of arsenic, we must again suspend our treatment or a week, or longer if necessary. We commonly anticipate this ossibility by commanding our patient to desist immediately from the use of the mixture if it seem to disagree in any manner whatever. The importance of these remarks will be the better understood when it is remembered that the patient may require to continue the remedy steadily and daily for a period of three, six, or nine months, and even longer. Hence our care in the combination of the medicine, and in the regulation and administration of the dose.

---

[1] *Vide* selected prescriptions, at the end of the volume.

Possibly we may wish to make a change in our remedy; one form or combination of arsenic may suit the stomach better than another; or it may be desirable for the sake of change, for change is an important feature in the use of medicines, and then we may select the acid solution of arsenic, the solutio solventis mineralis of De Valangin, of the same strength as the ferro-arsenical medicine, and administered in the same way, or with the addition of a little water to subdue the acid taste; but in every other respect after the same method, and with the same precautions. We have seen a case of alphos cleared by the acid solution, which had proved rebellious to the alkaline solution, but, as far as we know, it is not on the whole so reliable a remedy as Fowler's solution. Where there exists chronic disorder of the digestive organs; at or after the mid period of life; where there are signs of torpid liver and inactive nutrition; we may find an useful remedy in Donovan's solution.

Hebra sums up the virtues of arsenic in a few words when he says that it is the *best* remedy for alphos, and the *safest* for the prolonged use which this affection demands; but that it is no better than other remedies in respect of the power of preventing the recurrence of the disease. He has watched its administration for long periods, and has never seen any evils result from its use. Of the solutions, he gives a preference to Pearson's, and thinks lightly of Donovan's. He has administered the Asiatic pill[1] in doses equal to a quarter of a grain of arsenic a-day, raising the dose by degrees to one grain; and has continued to employ it until the total quantity taken by the patient reached 160 grains. His favorite formula, however, is that of the pilulæ arsenici cum opio,[2] containing each one-sixteenth of a grain of arsenious acid combined with a quarter of a grain of opium; of these he prescribes, night and morning, two, equivalent to a daily dose of a quarter of a grain of arsenic with one grain of opium; his patients have persevered with this dose for months with favorable results. We must, however, remark, with reference to the administration f solid arsenic, that the dose is less certain, and the remedy necessarily

---

[1] *Vide* selected prescriptions, chap. xxviii.

[2] *Ibid.* chap. xxviii.

[illegible] which he is well washed in a bath [illegible] this process nor that of Pfeuffer [illegible] although it facilitates the use of

[illegible] external treatment of alphos, as far [illegible] applied to that disease, is *tar*. Hebra [illegible] oleum empyreumaticum coniferum, [illegible] the British Pharmacopœia; the oleum [illegible] the huile de cade, a product of [illegible] oleum betulæ, or oleum rusci, prepared [illegible] the oleum fagi, produced from the [illegible] empyreumaticum ligni fossilis, the coal tar [illegible] employed in its native state, or in the form of [illegible] liniment with oils or glycerine, or in [illegible]. It must be well rubbed into the [illegible] with a stiff brush, and repeated twice a [illegible] the surface from the previous application by [illegible]. After being brushed into the skin [illegible] and, where the surface is extensive, the [illegible] covered by a blanket from two to six hours [illegible] and should wear a woollen covering, [illegible] remove the remedy. Tar is apt to create [illegible] of the skin; sometimes an erythema, [illegible] pain; sometimes a papular eruption; and [illegible] bullous eruption, resembling erysipelas. [illegible] observed a prominent state of the hair fol- [illegible] the papules of acne, and terms tar acne. [illegible] pruritus of the eruption, but now and then [illegible]. The indication for the cessation of the [illegible] of the fulness and congestion of the [illegible] desquamation, the spots become pale or [illegible] epidermis recovers its normal transparency and

[illegible] absorbed into the circulation, and gives rise to [illegible] sense of tightness or weight in the head, [illegible] sometimes vomiting, and sometimes diarrhœa. [illegible] feces are colored with a black fluid; and [illegible] green tint, referable to the presence of the [illegible] tar. These symptoms subside in a short [illegible] terminate in diuresis; and their dispersion is [illegible] mild diuretic fluids, such as barley-water [illegible] of potash. Sometimes nausea and vomit- [illegible] an hour to three or four hours after the [illegible] urine becomes discolored in an equally short

[illegible] of lime is applicable to cases in which an [illegible] and especially to very chronic patches of small [illegible] use of tar, the scales must, in the first place, be [illegible] soap, and the sulphuretted solution applied with [illegible], according to the effect intended to be produced.

commends that the patches should be rubbed with a piece of
aturated with the solution until the surface bleeds, or that the
ould be removed by pretty strong friction with pumice-stone.
e patches are desquamated and excoriated by these means,
ling surface should be dabbed with the sulphuretted solution;
ent must then be placed in a warm bath for an hour, after-
e eruption may be washed and anointed with oil or any sim-
ent. Crusts are formed over the patches, and peel off at the
week. Hebra observes that the process is too painful to be
ensively, but is especially suitable to the removal of small
patches, which may often be cured at a single sitting if the
be effectually carried out.
thalin, a white crystalline product of the distillation of coal,
trong smell of coal gas, has sometimes been used as a sub-
r tar, made into an ointment containing one drachm to the
nd rubbed into the skin; the smell is quickly dissipated. We
nd it a serviceable remedy. Lemery states, that by applying
and morning as a dressing on linen, he succeeded in curing
tients out of fourteen, in from five weeks to three months. It
erful stimulant, and may be used with friction, as in the case
ter the previous removal of the scales by soap.
rial ointments Hebra considers of value in mild forms of the
, and especially in alphous eruptions on the scalp and face.
ption must first be thoroughly washed with soft soap, and,
ring the skin, the ointment should be firmly rubbed into the
the process being practised twice in the day. The ointments to
e gives the preference are, the unguentum hydrargyri ammo-
e unguentum hydrargyri nitratis; and the unguentum hydrar-
idi viridis for milder purposes; and the unguentum hydrar-
lidi rubri (gr. x–xx ad ℥j) for more powerful effects. The
l ointments are brought in aid of tar and sulphuret of lime;
red iodide ointment should be applied by means of a dressing,
rubbed into the spots twice in the day, until it produces ex-
, or swelling and vesication.

CHAPTER XV.

STRUMOUS AFFECTIONS.

A, scrofula, or scrofulosis, presents itself in the skin in two
ither as simple scrofuloderma or as lupus. Scrofuloderma
ither as tubercular swellings of the integument or ulceration,
ns as an organic change in the tissues of the skin, followed
es by ulceration and sometimes by absorption. The former is a
result of recently produced and crude scrofulous tissue; the
onsequence of the identification of the scrofulous tissue with

the structure of the organ; the former is associated and in some degree dependent on inflammation and hypertrophy of lymphatic glands, subcutaneous abscess, or disease of bone; the latter is for the most part free from these associations.

SCROFULODERMA.—The tubercular swellings of cutaneous scrofula are of small size, indolent, and of a purplish red or livid color; they soften internally, break after a time, and give exit to a white curd-like matter and to an imperfect pus; often remain open or fistulous for a lengthened period; and when they at last disappear, frequently leave behind them a hard knot in the skin. They are most commonly met with on the neck and face, and in the neighborhood of ulcers or the remains of ulcers resulting from inflammation of the lymphatic glands. These tubercles increase so slowly in size, that they are often several months before they attain maturity, and if of any bulk, are apt to open at several points, the result of softening of separate parts of their structure; and when the openings take place successively, the tubercles continue in a fistulous state for many months longer. When the softened contents of the tubercle have been partially discharged, that which remains forms a crust over the aperture, and when the crust is from time to time disturbed or displaced, a fresh exit of ill-formed pus or ichorous fluid takes place, and the opening continues for an indefinite time, without showing any disposition to heal. When the healing is at last accomplished, an ugly scar is often left behind.

Scrofuloderma is especially remarkable for its chronic character, arising out of the low vitality of the morbid tissues; the edges of the ulcers are thin, often undermined, and wanting in granulations, or studded with granulations that are pale, tumid, and flabby, and bleed upon slight injury. Moreover, there is commonly an absence of purulent secretion, the discharges being ichorous or sanious, and more or less intermingled with curd-like matter and small flakes of disorganized tissue. Sometimes there is only one opening through the skin, the edges of which have the appearance and hardness of a cicatrix; at other times the diseased surface is honeycombed with apertures, from all of which there is an oozing of unhealthy and often fetid discharge.

In scrofulous subjects, particularly in young persons, it is not uncommon to find an inflammation of the matrix of the nail, *scrofuloderma unguale.* The disease begins by inflammation and swelling of the skin immediately around the edges of the nail, the extremity of the finger swells considerably, and becomes vividly red; and the scrofulous hypertrophy frequently extends to the whole of the tissues of the part, even to the bone, producing a *clubbed* finger. The nail, after a time, becomes separated, and leaves an angry-looking raw surface, upon which a rugged, ill-formed, and imperfect nail is from time to time produced. The denuded derma, covered with fungous granulations, secretes more or less of an unhealthy pus, and the disease is kept up for a considerable length of time, often for many months.

LUPUS.

By the term *lupus* we understand a strumous degeneration of the sues of the skin, attended with more or less hypertrophy, with ab- rption, and with ulceration; such morbid phenomena originating a constitutional condition or diathesis. Hypertrophy of the tissues oduces a special enlargement of the diseased part, constituting a rcumscribed prominence or tubercle, and sometimes a general swell- g. Absorption is manifested in the gradual disappearance of cer- in of the tubercular elevations without ulceration. And ulceration ay be superficial or deep, slow or rapid, and more or less exten- vely destructive. Moreover, lupus sometimes creeps more or less perficially over the surface of the skin, healing in the centre and aving behind it a permanent cicatrix, and growing by the circum- rence. These, the prominent characters of the disease, have laid the undation of its varieties; its ulcerative tendency has suggested the rms *lupus exedens* and *lupus non exedens*; its disposition to promi- nce and swelling, *lupus tuberculosus* and *lupus hypertrophicus*; and s proneness to peripheral growth, *lupus serpiginosus*. To the above sential forms, lupus exedens and lupus non exedens, have been dded another variety of affection characterized by disorganization nd atrophy of the papillary layer of the corium, but not necessarily ue to a strumous source like the preceding, namely, *lupus erythe- atosus*.

The three VARIETIES are, therefore, as follows:—

Lupus exedens,
Lupus non exedens,
Lupus erythematosus.

LUPUS EXEDENS.

n. *Lupus vulgaris*, Hebra; *herpes exedens*; *herpes esthiomenes*; *esthiomena*; *noli me tangere*; *dartre rongeante*; *esthiomene serpigineuse*, Alibert.

LUPUS EXEDENS,[1] the most destructive of the three varieties, may tack any region of the body, but is most commonly met with in the ce. On the latter it may begin in the mucous membrane, or in the in; in the former case involving the nasal duct, and causing swell- g of the lachrymal sac and a discharge of matter through the puncta chrymalia; in the latter case breaking out upon the tip, the columna, the ala nasi. In its origin it is a dull red hemispheroidal papule about one line in diameter, and remains for a long time in that ndition; later, it unites with other similar papules, and constitutes tubercle; the tubercle is smooth on the surface, desquamates from e to time, and spreads by degrees to the immediately surrounding in. Sometimes a small accumulation of pus takes place at the sum- t of the tubercle and forms a crust, and beneath this crust the sup- ration extends. At other times a crack occurs in the cuticle, an excoriation is produced, some exudation follows, and the exuded secretion dries up into a thin crust. When in either case the crust is removed, the surface beneath is found to be ulcerated, the ulcer being filled with granulations of various size, bathed in a purulent secretion. While pursuing this course to suppuration and ulceration the disease is slowly propagated to the immediately adjacent tissues, the skin becomes red and infiltrated, swollen and tense, suppurative points are produced at several spots, crusts are formed of various thickness according to the quantity of the secreted fluids, the crusts are loosened and rubbed off wholly or partially, and an extensive ulcerated surface is brought into view covered with granulations and excrescences; and in the case of the nose the alæ are swollen and everted.

---

[1] Portraits of diseases of the skin, Plates XLVI. XLVII. E F.

In the successive phenomena now described we have the explanation of the specific terms which have been applied to the disease, and are usefully employed to distinguish its different stages; for example, *lupus tuberculosus*, *lupus hypertrophicus*, and *lupus exulcerans*. The progress of lupus is commonly very slow; it remains for a long time in one particular stage, and then becomes suddenly active. It would seem to run its course more quickly in the winter and spring than at other seasons of the year, and sometimes progresses with so much celerity and with such destructive force as to deserve another of its synonyms, namely, *lupus vorax*.

Commonly, lupus exedens confines its destructive operations to the skin; but not unfrequently, when active in its progress, involves the deeper tissues; for example, all the soft parts of the lips, the eyelids, the nose, including its cartilages; sometimes also it attacks the periosteum, penetrates into the cavities of the nares and mouth, and destroys the vitality of the bones, giving rise to great suffering and terrible deformity. In a poor girl now before us the face has lost its normal figure completely, the lower eyelids are drawn down towards the middle line, exposing the red and tumid conjunctiva, while the nose and lips are gone, and their place supplied by a vertical slit opening into a cavernous opening, bounded above by the roof of the nares and behind by the posterior wall of the pharynx; all trace of palate or superior maxillary bones is lost, excepting at the sides. In another case, the face is simply a cicatrix; two oblique slits represent the place of the eyes; the apertures of the nostrils are entirely closed; and only a small circular opening remains at the side of the middle line, through which fluid nourishment can be introduced into what remains of the mouth. In a poor lady, thirty years of age, the ulceration has crept from each cheek across the face, destroying the nose totally, and producing such an amount of contraction as to draw the lower eyelids down upon the cheeks, shorten the upper lip, and denude permanently the gums of the upper jaw. The lower segment of the eyeballs is completely exposed, and the conjunctiva congested from the irritation of the atmosphere; the situation of the nostrils is marked by two round apertures of small size; the gums of the upper jaw are covered with sordes, and have retreated from the teeth, leaving them unnaturally elongated. On the cheeks, and extending from the temnwards to near the border of the lower jaw, the superficial n continues, and over this has formed a very thick yellowish kish crust, which is broken into angular fragments of irregular l size.

e body and limbs, lupus exedens presents a greater or less on to spread, it heals in the centre, leaving a thin white through which the subcutaneous tissues are often perceptible, ounded at the circumference by a slightly raised tubercular his is *lupus serpiginosus.* Sometimes, the central area over e disease has passed is smooth; sometimes a few tubercular ns are met with covered by white scales, and sometimes it is l rough and uneven by the mingling of tubercles, scales, and d cicatrices. The surrounding rim or border is more or less nd uneven; sometimes coated with white scales, and sometimes lowish, or grayish, or dark-colored crusts resulting from ulcera- *pus serpiginosus exulcerans.* Lupus serpiginosus may be pre- various parts of the body at the same time; sometimes occu- e greater part of a limb, and sometimes the back of the hand e foot. Occasionally, the morbid patch is perforated with s openings through which pus exudes, or is roughened by a le of granulations. On the feet, the serpiginous ulceration ownwards to the sole, and forward to the toes; and the morbid of the latter not unfrequently adhere, and the toes are united ngle mass.

, who has observed lupus with especial care, gives the follow- sterly description of the origin and progress of the disease. marking on the extremely chronic nature of lupus and its on to remain for months, and often years without change, he makes its appearance in the form of reddish-brown papulæ of of millet seeds; the papulæ are slightly prominent; some- ooth, and sometimes covered over with a thin white scale; rease very slowly in size, and when there are several congre- gether, or when new papulæ are produced in the interspaces eady existing group, they are apt to become blended by their and constitute a small tubercle of the size of a lentil, or an, and sometimes by interstitial infiltration to attain the bulk egment of a hazel-nut, and even of a walnut. By a further of prominence and extension, and by additional infiltration, ives to the morbid surface a puffed and tumid appearance, the cquires the character of a nodulated, hypertrophic, and tumid *upus tuberculosus hypertrophicus seu tumidus.* The lupus may n either of the above described states for a longer or shorter ithout any apparent change; or it may spread out and increase t; while around the circumference new papulæ may be pro- hich may blend with each other, forming tubercles; and the iting with the original blotch, may still further extend the the disease.

ext phenomena that occur in lupus are those of retrograde phosis; either the tubercles and infiltration subside with or an increase of desquamation; or, more frequently, softening of the morbid tissue is set up attended with suppuration. A pustule is produced at one or more points in the midst of a congested spot, or upon the summit of a tubercle or nodule; and the suppurative process is repeated at intervening points, until a considerable extent of epidermis is raised by the purulent accumulation, and dries up into a thick and rugged crust. The crust varies in appearance, in thickness, and density, in accordance with the nature and quantity of the secretions which enter into its composition, whether they be pus alone, or pus mingled with serum, blood, or lymph, or with the glandular secretions of the skin; it varies also, in its degree of adhesivenes to the surface, being sometimes loose and broken, and sometimes firmly and closely attached. If the crust be removed, either by the accumulation beneath it of morbid fluids or designedly, the surface will be seen to present elevations and superficial excavations, the former in the shape of excrescences and exuberant growths, the latter in the form of excoriations and ulcers. The exuberant growths vary in size from the bulk of a hemp seed to that of the segment of a walnut, and are themselves composed of small granulations no larger than the head of a pin: these vegetations are for the most part semi-globular in figure, of a brownish-red color, and are immersed in a purulent or serous secretion; they are soft and spongy in texture, and often excoriated by superficial ulceration. The ulcers present a concave yellowish or reddish-gray base, with either prominent and swollen, or flabby and indolent borders; and the epidermic desquamation from the rest of the surface consists of layers which vary in size from the breadth of a lentil to that of the palm of the hand, are thin in texture, and bounded by a rounded or angular border. These are the characters which especially distinguish the ulcerative lupus: *lupus exulcerans, herpes phagedænicus, esthiomenos*, &c. The unchecked progress of this kind of lupus ends in destruction of the skin, subcutaneous cellular tissue, fasciæ, and cartilages, and often in the loss of a part or the whole of the nose, the eyelids, or the pinna of the ear.

Sooner or later the ulceration ceases; the secreted fluids diminish in quantity and become thicker in consistence; new skin is produced, and grows from the circumference to the centre; and by degrees the ulcers are covered with a thin, smooth, and delicate epidermic layer, through which the red hue of the subjacent corium is apparent. At a later period the redness of the new covering disappears, the epidermic layer thickens, and the cicatrix contracts and alters its appearance, sometimes being marked by elevated lines which radiate from a centre towards the periphery, sometimes raised into prominent ridges, and presenting hollows and elevations, and finally resembling in every respect the cicatrices produced by burns, or scalds, or suppurating sores of whatever kind. After some years, these cicatrices lose their red tint and become white, smooth, and shining, and by their contraction give rise to serious deformity; such, for example, as ectropium, drawing down the tip of the nose, distorting or averting the lips and occasioning dribbling of the saliva, contracting the skin of the neck, and interfering with the movements of the head; and, finally, impeding and restraining the movements of the limbs.

While lupus vulgaris is running through its course and progressing towards cure, new papules and tubercles are very often developed along the periphery of the cicatrix. These papules and tubercles obey the same laws as those which governed their predecessors; they blend with each other, desquamate on the surface, suppurate, ulcerate, and eventually become closed up with new skin, and so increase the dimensions of the original cicatrix; while they also in their turn are followed by a further growth externally to themselves, and become involved in a wider spreading increase of the disease. In this way the appearance of the lupus is sensibly modified, and the resulting form is termed, *lupus serpiginosus, esthiomenos obambulans.*[1]

LUPUS NON EXEDENS[2] (Plate XIII.) is less destructive, and therefore more lasting than lupus exedens; it is unattended with ulceration, and its situation is somewhat different, beginning on the cheek, on the upper lip, or on the lobe of the ear, and occasionally on the ala nasi, and spreading, not in depth, like the former variety, but along the surface. It originates as a small tubercle of a reddish-yellow, or pale amber-color, and has the appearance of a drop of jelly effused beneath the cuticle. It is obvious that the papillary layer of the skin is destroyed, and converted into a tissue of low organization, a kind of hyaline or crude cell-tissue; there is no inflammation, no redness around the tubercle, and a few minute vessels may be seen straggling through it, or over its surface.

This is the first beginning of lupus non exedens, and in this shape it may often be seen in the very centre of the blooming cheek of a young girl; a few weeks later, two or three yellowish points may be observed around the original tubercle; these increase slowly, or, perhaps, the change is more quickly effected, and an uniform patch of slight elevation is formed by the blending of the tubercles, and the patch may go on increasing until it covers the greater part of the cheek. There is still the same reddish-yellow or pale amber tint of color; still the same evidence of an apparently gelatinized tissue in place of the natural papillary surface of the derma; still the minute vessels straggling through the transparent tissue; still the absence of vascular congestion, either in the patch or around its circumference. We havė before us one of those curious transformations due to lowered vitality of tissue; a highly organized structure, the papillary surface of the derma, converted into a non-vascular gelatinous stratum, and in a state to be absorbed and removed like an effete material. But the vitality of the skin is unequal to the exertion of removing the disorganized tissue, and so it remains; occasionally, however, it is removed spontaneously, and then we have proof of the nature of the disease; the papillary layer of the derma is gone, the fibrous structure of the corium, with its cord-like bands, is brought into view, and remains as a cicatrix for ever after. Here then is a cicatrix, permanent for life, on a spot where there has been no lesion of continuity, not even an abrasion of the cuticle.

---

[1] Atlas der Hautkrankheiten.

[2] Portraits of diseases of the skin, Plate XLV. A C.

on the face; lasting for a long period without change, and ting in a dry, sordid, and atrophied surface, or in a white ed cicatrix. Lupus erythematosus is sometimes seen associated pus non exedens as a sequel of that complaint.

disease is commonly met with on the nose, the cheeks, the ip, or the scalp; it appears as a patch of irregular figure but fined redness; the centre of the patch being coated over with ordid cuticle, slightly depressed, and the follicles filled with xuviæ; at a first glance the patch appears trifling; its sta- habit and resistance of treatment excite suspicion that it is ing more than common erythema; its disposition to occasion of the skin proves it to be more serious in its nature, and fortunately disappears spontaneously, the white cicatrix indi- the removal of the papillary layer of the derma, or on the e destruction of the hair-follicles, declares its relation to the of lupus. It is a chronic and very troublesome disease, and nes incurable.

ciated with lupus erythematosus of the face we not unfre- meet with similar spots on the fingers; in the latter situation ve the appearance of chilblains, and are commonly mistaken n; but their persistence through the summer as well as the the white dry cuticle which covers their surface, the central ion, and frequently the atrophy of the portion of the skin d, indicate their real nature. The erythematous spots or blotches ally of a circular figure, of a purplish-red color, and slightly bove the level of the surrounding skin. They vary in size from three lines to an inch in diameter, and gradually become ed in the centre; the cuticle in the centre assumes a whitish, appearance, gradually dries up into a thin, yellowish, and layer, and desquamates from time to time. A common situa- these blotches is the joints, and they are generally associated ldness of the fingers and hands, which gives a color to the on of their being chilblains. Like the similar affection of the the face, the special character of the disease is atrophy; and ung girl now under our treatment the atrophy has extended to ole of one finger, which is conical towards the end from loss tance and contraction of the skin, and bloodless from the tight f the skin upon the phalanges.

NOSIS.—Scrofuloderma may be mistaken for syphiloderma, forming our diagnosis we must be guided by the strumous tion or descent, together with the age of the patient, and the y signs of struma; for example, the clear anæmic skin, blue hick lips, and enlargement of lymphatic glands. The ex- ed physician detects these signs at a glance, and is not likely eceived. Occasionally it is not easy to draw the line between scrofuloderma and lupus non exedens; and it is far from un- n to find the former merge into the latter at the expiration of years; the period of abscess and ulceration belongs to scrofuloderma; the tubercular and non-ulcerative period to lupus non exedens.

The diseases likely to be mistaken for lupus exedens are tubercular and ulcerative syphiloderma and carcinoma; the resemblance between lupus exedens and some forms of syphilis is so close that one of the varieties of the latter has received the objectionable name of lupus syphiliticus. It is desirable to avoid confusion between these important diseases, as the treatment suitable for the one would do injury to the other. Our diagnosis must be founded upon the general history of the case rather than upon seemingly distinctive appearances; the former is certain ground, the latter may be delusive, and the difficulty can only arise when the disease is limited to the point of the nose or the edge of the nostril. If there exist eruption in other parts of the body, if there be evidence of the previous existence of eruption elsewhere, or any of the concomitant signs of syphilis, we may easily decide the question; while the associated symptoms of lupus are, struma or strumous parentage, or the development of the disease at an early period of life. Cancer (epithelioma) commences in a sebiparous gland, is slower in its progress, attended with less congestion and swelling than lupus, and presents a peculiarly transparent and hardened border around its circumference.

Lupus non exedens, particularly of the face of young persons, whom it usually attacks, is unmistakable; on the limbs and trunk of the body it may be taken for tubercular syphiloderma or alphos. Youth, the presence of a strumous diathesis, and the absence of sore throat and other signs of syphilis, decide the question in favor of lupus. We have seen lupus non exedens on the limbs, occurring in circular patches of about an inch in diameter, strangely like alphos in appearance; but the origin was different, a pustule or small abscess; and if a portion of the patch have undergone spontaneous cure, there will be the decisive evidence of a cicatrix in lupus and the absence of any morbid alteration of the skin in alphos.

Lupus erythematosus is distinguished from all other affections of the skin by its maintenance of a circumscribed erythematous form; its obstinate persistence; the atrophy of the surface of the skin that ensues; its sordid appearance; and the presence of a permanent cicatrix in parts that have healed. It is comparatively a rare affection.

CAUSE.—The cause of scrofuloderma and lupus is the strumous diathesis, whether hereditary or accidental.

PROGNOSIS.—Scrofuloderma and lupus are remarkable for their obstinacy, frequently resisting treatment, and lasting many years, or for life; and even when the sequel is favorable, leaving behind them indelible cicatrices, and often considerable deformity, as where the face and nose are attacked, and the latter more or less destroyed by absorption or ulceration.

TREATMENT.—In strumous affections in general, great attention must be paid to diet. There is commonly weak nutritive power and defective assimilation and sanguification; hence our patients are fair in complexion, pallid, flabby in tissue, and more or less anæmic. The diet should consist of one-half or two-thirds animal food. Animal food should be taken at each meal, and with the addition at dinner and supper of beer, either ale or porter, according to the taste of the patient. In these disorders occurring in children, there is advantage also in mingling a few grains of phosphate of lime with each meal.

The medicines especially applicable to strumous affections are cod-liver oil, iodine, iron, and nitric acid; and these specific anti-scrofulous remedies may be combined with ordinary tonics, namely, vegetable bitters, cinchona, or quinine. In children the superphosphate of iron is especially valuable, and both in children and adults the syrup of the iodide of iron will be found of great service. At the recommendation of the late Mr. Peter Price we have employed the iodide of ammonium with good results, using it both internally and externally at the same time. For internal exhibition the dose is two or three grains, twice or three times a day, in any suitable vehicle, such as the compound fluid extract of sarsaparilla or syrup of orange peel. And for external use, a convenient formula is one drachm of the salt dissolved in an ounce of glycerine, and applied with a camel's-hair brush to the enlarged glands night and morning. Donovan's solution has sometimes been found serviceable in lupus, particularly in conjunction with cod-liver oil; and the bichloride of mercury in combination with cinchona.

In all the forms of lupus it is important to regulate the functions of digestion and the secretions of the patient, and afterwards make our way through the ordinary tonics to the specific tonics; in other words, to put our patient in the best possible health, and, by every means in our power, conjointly with the local treatment. By this process we give our local treatment a better chance of a certain and speedy success. We must maintain and support the vital power of the patient as much as possible, for our contention is against a debilitated constitution.

The *local* treatment of scrofuloderma must be stimulant in various degrees, according to the form of the disease; while water-dressings and poultices must be looked upon with great suspicion, as generally doing much more harm than good, by increasing the local debility of tissues already seriously weakened. Scrofuloderma in an ulcerating and fistulous state may be treated with the unguentum resinæ flavæ, diluted to suit the sensations of the patient, or the unguentum picis liquidæ, or the unguentum picis juniperi; the unguentum elemi is also an useful ointment; or, if we need milder applications, we may have recourse to the benzoated ointment of oxide of zinc, or unguentum calaminæ. The liquor plumbi diacetatis, pencilled on the tender skin, is sometimes useful; and when the ulceration is healed, the juniper-tar tincture, or balsam of Peru, will be found of service in strengthening and hardening the skin. Where tuberculous growths are to be absorbed or enlarged glands to be reduced, the compound tincture of iodine or a saturated solution of iodine in glycerine may be painted on the part.

In lupus exedens the morbid tissue of the ulcer must be destroyed, and the condensed and infiltrated tissues unloaded by means of a free application of nitrate of silver, the acid nitrate of mercury, or of a solution of equal parts of potassa fusa and water. After the operation the part may be dressed with the unguentum resinæ diluted one-half, or with the benzoated ointment of oxide of zinc.

Caustics constitute a necessary part of the treatment of lupus, and the enumeration of these remedies forms a somewhat considerable catalogue. The caustics the best suited for the purpose are, the strong nitric acid, the potassa fusa, or the chloride of zinc. The nitric acid is to be made into a moist paste with the sulphur sublimatum of the pharmacopœia, and applied by means of a small wooden spatula. The potassa fusa may either be used to touch the surface of the ulcer, or made into a paste with quicklime; and the chloride of zinc may be made into a paste, with the addition of two or three parts of flour to one of zinc. The Vienna paste, which is sometimes employed for this purpose, is composed of equal parts of potassa cum calce and quicklime, mixed to a proper consistence with spirits of wine. An arsenical paste, consisting of equal parts of arsenic and animal charcoal, has also been recommended; and an arsenical powder, bearing the name of Dupuytren, composed of one part of arsenic mixed with two hundred parts of calomel. The chloride of gold and acid nitrate of mercury have also been mentioned as suitable caustic applications. The nitric acid paste may be left to dry on the part; the Vienna paste takes from ten to twenty minutes to produce its proper degree of effect, and frequently requires to be guarded from contact with surrounding parts by means of a piece of plaster; and the chloride of zinc paste may be allowed to remain undisturbed for from four to eight hours. The arsenical caustics are dangerous from liability to absorption of the mineral poison. After the caustic has been on for some hours, or when removed, the ulceration may be treated with water-dressing, either with oiled silk or with Alison's prepared lamb-skin, or with a dressing of the benzoated ointment of oxide of zinc, or liquor plumbi, or calamine ointment.

In lupus non exedens the patch of morbid tissue, or the tubercles both primary and secondary, must be destroyed by the application of the solution of caustic potash (equal parts); after the application no dressing is required: and when the crust falls, the caustic should be repeated until the disease is entirely removed. When the diseased surface is extensive and the caustic can only be applied to a part of the eruption, the remaining portion should be kept washed night and morning with the juniper-tar soap, and afterwards anointed with the benzoated ointment of oxide of zinc, or with glycerole containing one drachm of the oleum juniperi pyrolignici, or two grains of the bichloride of mercury to the ounce. If any objection be felt to the caustic potash, the acid nitrate of mercury, nitric acid, or the chloride of zinc, may be employed instead.

Lupus erythematosus is best treated in the same manner as lupus non exedens, with the caustic potash solution. Other remedies have been recommended, such as a concentrated solution of iodine in glycerine, the compound tincture of iodine of double strength, the iodide, biniodide, and chloriodide of mercury ointments, the iodide of lead ointment (ʒij ad ℥j), &c.; but we give the preference to the treatment above described.

CHAPTER XVI.

CARCINOMATOUS AFFECTIONS.

CARCINOMA of the skin is apt to occur upon the face in the form of a small tubercle, and for the most part after the middle period of life. The tubercle is solitary, gives rise to little or no uneasiness, is slow in its progress, and persists for several years without attracting attention. When ulceration begins, the process is equally torpid, but occasionally, and in an irritable state of constitution, may take on a more rapid action, and give rise to considerable destruction.

The tubercle at the beginning is round or lobulated, about one line in height and two in diameter; it is hard, semi-transparent, colorless or yellowish and sometimes bluish, and streaked by a straggling network of small veins. It grows by the increase of its circumference, the border being more or less lobulated, and the centre somewhat depressed, and reaches a diameter of four to six lines, and sometimes one to two inches. By degrees a thin scale is produced over the central depression, one or two fissures are formed in the centre of the mass, an oozing of a colorless or semi-purulent ichor takes place, and the scale is converted into a scab or crust, sometimes brownish in color, and sometimes, from an oozing of blood, almost black. At this period the tubercle is generally circular in figure, has a raised, lobulated, and semi-transparent border, streaked by venules, with a central dark-colored or black scab, that looks like the lid of a cavity or like an eschar.

Ulceration is now established, but proceeds slowly, and is very imperfect; it is a softening and breaking up of the centre that takes place, rather than absorption. The discharge increases, although still small in quantity; it is ichorous or semipurulent, and sometimes sanguinolent; it forms by concretion and desiccation a thicker and harder crust, and on the removal of the crust a deep hollow is found, which is bounded by a vertical edge, that is sometimes excavated at its base, and sometimes everted. The floor of the cavity is uneven; it is composed of red, tumid, and bleeding granulations, which sometimes assume a fungous character, and sometimes rise in the centre above the level of the surrounding surface.

There is but little pain accompanying the progress of the disease; sometimes there is itching, which leads the patient to loosen the crust with his nail; sometimes there may be throbbing or darting, but commonly the local suffering is confined to a feeling of numbness, heaviness, or dull aching. These symptoms are increased if there be any derangement of digestion; and they are apt to be augmented by any constitutional disturbance of the economy, such as an attack of gout. When the disease takes on a more active character, it may than twice as frequent in males than in females; in two-thirds number it occurred after the age of fifty, several of the patient above sixty; and its general duration at the time of comin treatment ranged between two and fifteen years.

In all the twenty cases the disease manifested itself on the its immediate neighborhood; in nine, it appeared upon the ch eight, upon the nose; while in one case it was developed on t brow near its outer extremity; in another, on the temple, a third, upon the mastoid process. When it is formed on the the bridge of the nose, it is apt to creep towards the angle of t near the ear it moves backwards; and in an instance before destroyed the whole of the pinna, with the exception of the up

Commonly there is very little disturbance of the general h this disease; sometimes we have noted cachexia, anæmia, d feeble heart, and on several occasions an unhealthy condition skin of the face, which was dry, thin, wrinkled, sordid, and see withered.

The form of carcinoma cutis now described has its origin in parous gland; it is, in fact, an epithelial cancer, or epithelioma nating in one of these glands, conjoined with a propagation of ease to surrounding glands. This idea of the pathology of the serves to explain the extreme tardiness of its course at first, w only, or a small group of glands are attacked, and its subseque rapid progress, when it takes in the circle of glands which diately border its circumference. The glandular origin and the complaint also serve to explain the limitation of the diseas gland-bearing portion of the skin.

True carcinoma cutis is a much more rare affection than lioma, and is associated with a morbid condition of the ly glands; the tubercles of true carcinoma are hard, non-vascu produced apparently by infiltration of cancerous matter i rated state the disease soon betrays its malignant nature. It might also be taken for an enlarged sebiparous gland, and its scab for a mass of concreted and discolored sebaceous substance. When the morbid action has sunk into the deeper tissues of the skin, the affected integument is remarkable for its hardness.

CAUSE.—Carcinoma, like alphos and scrofuloderma, takes its origin in a *diathesis*, and not in a blood-poison, like the zymotic and syphilitic affections. Alphos and struma are hereditary; carcinoma is frequently the same, and, according to Weeden Cooke, is allied to tuberculosis, and apt to be met with among the relatives and descendants of consumptive persons. It is an indication of degeneration of the organic tissues, and is therefore very commonly associated with mal-assimilation, defective nutrition, and cachexia.

PROGNOSIS.—Carcinoma of the skin is more under our control than a similar affection of the deeper tissues, and, if taken early, may be effectually and radically removed. It is altogether superficial at first, and seemingly perfectly local, exhibiting no tendency to produce hypertrophy of neighboring lymphatic glands, nor any general disorder of the constitution. An unfavorable sign is, hardening of the subcutaneous tissues and the implication of cartilage in the disease.

TREATMENT.—The carcinomatous tubercle should be destroyed as early as possible by caustic, and the same remedy is equally applicable to its ulcerated condition. We sometimes use caustic potash, sometimes nitric acid, sometimes the acid nitrate of mercury, and sometimes the chloride of zinc; but we prefer the three former, in consequence of their being the least painful. A fragment of potassa fusa pressed into the centre of a tubercle of moderate size very soon disorganizes it throughout; the disorganized mass dries into a crust; and when the crust falls, at the end of about twenty days, the skin will be found healed and the tubercle gone, leaving a very unimportant cicatrix. If the tubercle be not wholly removed, the operation must be repeated; or if, at a later period, there should be any threatening of a return of the disease, then also the caustic should be reapplied. When the disease has the form of an ulcer, and particularly of any magnitude, it is better to apply a solution of equal parts of caustic potash and water by means of a sponge-brush. Formerly we gave a preference to the nitric acid, but we are now strongly in favor of the potassa fusa, on account of the rapidity of its action, the speedier cessation of pain, and the absence of the obscuration associated with the use of other caustics. The acid nitrate of mercury also requires the aid of the sponge-brush for its application. When nitric acid is selected, it should be mixed with sublimed sulphur to the consistence of paste, and applied somewhat thickly by means of a slip of wood; the sulphur incorporates itself with the scab, and the latter falls off in about the same time as that produced by the potassa fusa. The chloride of zinc may be applied in its deliquescent state by the aid of a camel's-hair brush, and afterwards dressed with dry lint. The other caustics require no dressing, and no further local interference until the crust falls.

The constitutional treatment of epithelioma, as of cancer in general, must have for its object to improve the tone of the patient, to invigorate nutrition, and to subdue cachexia. These ends are best attained by regulating the secretions and diet, and administering tonic remedies; among which, the mineral acids, quinine and iron, and cod-liver oil, must occupy an important place.

CHAPTER XVII.

ZYMOTIC AFFECTIONS.

Zymotic affections of the skin are eruptions originating from the presence in the blood of an organic poison, which operates on the blood like a ferment, hence the term zymotic, derived from ζυμη, fermentum, or leaven, and tends to the production, in excessive quantity, of a poison similar to itself, and to the elimination of that poison by the surface membranes of the body, and especially by the glandular apparatus of the skin. The special eruptions coming under this head are:—

Rubeola,	Varicella,
Scarlatina,	Vaccinia,
Variola,	Equinia,

Framboesia.

The first four of these affections are the exanthematous or eruptive fevers; vaccinia is an eruptive disease of cattle, analogous to variola, and transmissible to man; equinia is a disease of the equine family, and also transmissible to man; and framboesia is a disease of the natives of Africa, possessing a close resemblance in some of its features to the eruptive fevers.

Arising from a similar cause, zymotic affections offer to our observation certain symptoms which are common to the whole; for example, *constitutional symptoms,* due to the action of the poison in the blood and on the nervous system, symptoms having the character of fever; and *local symptoms,* manifesting the operation of the poison on the surface tissues of the body, the skin and mucous membrane. The former series of symptoms belong to the consideration of fevers; the latter bring the zymotic affections into the family of cutaneous disorders; and just as the history of fevers would be incomplete without embracing the eruptive fevers, the review of cutaneous diseases would be equally imperfect without the consideration of the phenomena presented by the operation of the zymotic poison in the tissues of the skin.

The poison of the zymotic affections, as of fevers in general, manifests its first and most powerful influence on the nervous system; the brain, the spinal cord with its branches, and the organic system of nerves, are, as it were, intoxicated by the poison; then a general excitement of the circulating system ensues, and the excitement of the circulating system is followed by an outburst of eruption, an exanthema of the skin.

The exanthema is manifested by redness, resulting from congestion of the vascular plexus of the skin, congestion of the vertical or follicular capillary plexus, giving rise to puncta and papulæ, and congestion of the horizontal or papillary capillary plexus, producing suffusion. In rubeola or measles the congestion affects chiefly the follicular plexus, and, governed by a law of structure, appears in small oblong clusters or corymbi, which give to the skin a mottled appearance, corresponding with the mottling of the arms of children in cold weather. In scarlatina the congestion is more diffused, from a blending of the two forms of congestion, and probably from a greater activity of circulation; it is no longer limited to the small insular corymbi which represent the extent of distribution of the ultimate ramuscules of a small artery or the range of influence of a nervous twig, but occurs in patches of large size, or is more or less uniform over the whole surface. Moreover, minute papulæ, resulting from follicular congestion, which are common in scarlatina, are less frequent in rubeola, and exhibit their highest degree of development in variola. In variola the congestion is chiefly follicular, and produces papulæ, which subsequently run through the vesicular and pustular stage, and terminate in dark brown and black scabs.

The pathology of the zymotic eruptions is, therefore, an active congestion of the capillaries of the skin running on to the production of minute papulæ, and of larger papulæ which pass through the vesicular and the pustular stage. As far as pathology is concerned, rubeola and scarlatina are aborted forms of variola; rubeola representing the simple congestive form; scarlatina the congestive and papular form; and variola the congestive, papular, vesicular, and pustular forms. It follows from this view of these eruptions, that the exanthema of rubeola, usually flat, may be more or less papular; and papulæ are often met with on the face, neck, hands, and legs, while they are absent elsewhere. Scarlatina, again, generally papular, particularly on the parts above indicated, may be more or less smooth. But rubeola and scarlatina never run on to the production of pustules, as is the case with variola. Rubeola and scarlatina, having but the limited range of simple congestion and papulæ, offer little variety of pathological structure; but the case is different with variola, which embraces all chief pathological forms of inflammation of the skin; namely, redness, papulation, vesiculation, and pustulation. Variola may be arrested or aborted at each of these stages, and we may have instead of the perfect pustular development of the eruption, a series of aborted forms, that reach no further than the papular, the vesicular, or the incipient pustular stages. These aborted forms of variola are termed varioloid, and as their "abortion" is a frequent consequence of a previous attack of variola, or of vaccination, conditions which modify the violence of the variolous poison, they are so called "modified variola."

Variola, or smallpox, besides representing the human disease known by that name, also includes vaccinia, or the smallpox of the cow; than which, as offering a safeguard against the violence of variola, and a protection to the population, there is no affection in the whole category of zymotic diseases of more interest in regard to public health.

If we turn to the classification of Willan, we shall see that the diseases collected into the group of zymotic affections are dispersed among four of his orders, namely, exanthemata, vesiculæ, pustulæ, and tubercula; *exanthemata* taking possession of rubeola and scarlatina; *vesiculæ*, of varicella and vaccinia; *pustulæ*, of variola, and *tubercula* of frambœsia; but it is clear that the mutual relations of these affections is such that it would be unphilosophical to continue so natural a separation.

The eruptive or exanthematous fevers seem to have originat[illegible] the East, and were first described by the Arabian physicians; [illegible] from the East they were gradually propagated through the [illegible] the world. Of the nature of the poison or poisons which give [illegible] them we know very little. We assume that they are of organic [illegible] tion, and are derived from the same source as the poisons which [illegible] duce the continued fevers; but we do know that they are highl[illegible] fectious and contagious, and are actively transmissible from an inf[illegible] to a sound person, both through the medium of contact, na[illegible] immediate or direct infection or *contagion*, or through the interve[illegible] of the atmosphere, namely, mediate and indirect infection, or ai[illegible] *infection*. Moreover, there seems to be good reason for the belief [illegible] there are three separate and distinct poisons, although argument[illegible] not wanting for supporting the theory that one and the same po[illegible] under the influence of different atmospheric conditions, and in diff[illegible] states of the body, may have the power of giving rise to the d[illegible] ences of character which distinguish the three diseases. Thus, [illegible] rubeola prevails as an epidemic, scarlatina is least frequent, and [illegible] *versâ*; and occasionally, as in the spring of 1864, we meet wit[illegible] epidemic, in which rubeola and varicella appear to be intermin[illegible] and the same patient may experience in succession an impe[illegible] rubeola (rubeola notha) and a varicella.

The exanthema of the eruptive fevers presents a curious differ[illegible] of color, which has suggested the term rubeola, ruby or raspb[illegible] colored, and scarlatina or scarlet colored, important diagnostic [illegible] racters, depending possibly on a more sluggish circulation thr[illegible] the dilated cutaneous capillaries in the former, and a more active circulation through the latter; and, possibly, in some degree also up[illegible] modification of the coloring principle of the blood by the poison[illegible] ferment, such as occurs in association with the syphilitic poison.

The physiological relationship of the skin and mucous membrane is amply illustrated by the exanthematic affections; the mucous membrane of the fauces is congested in all the three diseases, but most in scarlatina; in rubeola the congestion elects for its principal seat the conjunctiva, the Schneiderian membrane, and the mucous membrane of the trachea and bronchial tubes; and the eruption of smallpox is met with in severe cases, also in the mucous membrane of the mouth, fauces and trachea. In general terms, rubeola may be said to attack chiefly the mucous membrane of the air-passages; and scarlatina, the mucous glands and the mucous lining of the mouth and salivary glands.

The exanthema, in its evolution on the skin, makes its first appearance on the face and neck, next on the trunk and upper extremities, and lastly reaches the lower limbs; and departs in a similar order; while the eruption is always most abundantly developed on parts exposed habitually to the action of the air, such as the face and the hands. At its decline the redness loses its vivid hue and becomes dull, subsequently purplish, and not unfrequently leaves behind yellowish, brownish, and greenish stains which call to mind the tints of a bruise.

Congestion of the vessels of the skin is necessarily attended with a certain amount of swelling, the skin is somewhat thickened, and the subcutaneous cellular tissue more or less infiltrated, sometimes to the extent of constituting œdema. Hence the features look swollen or puffed, the limbs are enlarged, and œdema may prevail in the latter to a greater or less extent. The sensations of the skin are a moderate degree of tingling and itching in the early stage of the eruption, subsequently heat, and when desquamation begins, a very troublesome degree of pruritus.

Another phenomenon accompanying the decline of the exanthematous eruption is *desquamation* of the cuticle. The congestion of the skin causes a temporary suspension of the process of epidermal cell-formation; the epidermis loses its vitality, and is separated from the newly-formed horny tissue produced beneath it, and when the skin resumes its normal functions, the old cuticle is cast off in the form of exuviæ of considerable extent; in scarlatina, the entire cuticle of the hands or of the feet is sometimes cast in a single piece, and the new and tender cuticle, showing through its transparent wall the pink hue of the derma, is seen beneath. The period of desquamation is with good reason regarded as a time of active transmissibility of the disease, for the cuticle is saturated with fluids produced during the most active period of the fermentation of the poison, and particles of exfoliated cuticle become so many vehicles of contagion.

In the normal course of the eruptive fevers, a full development of the exanthema is favorable to the safety of the patient; the disease would seem to expend its power upon the skin, and the action on the skin to divert the violence of the fever from the internal organs. Hence we regard with satisfaction a thorough development of the exanthema, while we perceive with apprehension the disappearance or retrocession of the rash after it has once broken out, and we employ all our efforts to restore it. All the exanthemata may exhibit the fever without the eruption; but in this case the fever is commonly mild, and the absence of eruption indicates only a mitigated form of the disease.

The zymotic fevers are to a certain extent protective of the constitution against a repetition of the disease, and persons who have once had rubeola, scarlatina, or variola, may be regarded as free from the

st appears on the *fourth* day, sometimes
the fifth. It is seen in the first
front of the neck, on the cheeks,
eight in twenty-four hours.
per extremities; on the
aching its height in
th day appears on the
escence follows a similar
ace; on the seventh, upon
ighth, upon the back of the
h day the form of the patches
sh discoloration, which slowly

unctated rash, resulting from con-
the follicles; the puncta are clus-
s or corymbi, and are more or less
y a moderate suffusion, resulting from
ular capillary plexus. This arrangement
e to the congested skin, which is pathogno-
e and there some of the pores of the follicles
papulæ, and on certain regions of the body, as
bs, these papulæ are more strikingly apparent
. Indeed, on the face, it is not uncommon to find
n, roughened by papulæ, the corymbose appearance
in general the mottled arrangement of the clusters is
on the trunk of the body than elsewhere. Added to
e form of the exanthem, as diagnostic of rubeola, we
ll red crimson color which has been compared to that of
rry; and at the decline of the eruption, the exfoliation of
e in thin foliaceous plates and furfuraceous scales.

normal course of rubeola presents a four-day premonitory of moderate vehemence, a four-day exanthema, succeeded by a day decline, a subsequent exfoliation of the cuticle, and gradual rn to health. It also brings to our notice an inflammatory congestion of the mucous membrane, beginning in the conjunctiva, the Schneiderian membrane, the Eustachian tubes, and the fauces, and running downwards along the trachea and bronchial tubes, accompanied with cough, dry and irritable at first, and subsequently moist and mucous, the mucus at the height of the disorder being raised in roundish pellets, termed *nummular* expectoration. Later in the course of the disorder the mucous membrane of the alimentary canal participates in the congestion, and relieves itself at about the ninth or tenth day by diarrhœa.

A review of the normal course of rubeola is suggestive of its complications, its possible dangers, and its subsequent evils denominated *sequelæ*. The first and most important of these is the affection of the lungs; the catarrh, the hoarseness, and the cough usually subside on the seventh day; but instead of subsiding, the bronchitis may increase and run on to pneumonia and permanent disease of the lungs; there may be purulent discharges from the eyelids, nasal and ear passages, and even ulceration. The mucous membrane of the mouth, of the fauces, of the salivary glands, may become inflamed, and proceed to ulceration and suppuration; the mucous lining of the larynx may become swollen and œdematous, and threaten suffocation. The diarrhœa, which generally ceases spontaneously in a few days after the disappearance of the rash, may be prolonged, and become complicated by ulceration of the mucous glands, and even the mucous lining of the genito-urinary apparatus may suffer a similar disorganization. Moreover, as a secondary evil, the mesenteric and lymphatic glands may become enlarged and impervious, and lay the foundation of tabes and superficial abscesses; there may be tubercular deposits in the lungs and in the serous membranes, or there may be rheumatic inflammation of the joints.

The period which elapses between exposure to contagion and the commencement of the fever, usually termed the *period of incubation*, varies between seven and fourteen days, and the term at which a patient may be supposed to be free from the danger of communicating the infection, three or four weeks.

Rubeola is a disorder of childhood, rare in infants, but occasionally met with in the adult. It may happen a second or a-third time, and without the modification which occurs in variola; indeed, it is more likely to be severe in the adult than in children. It makes its attack usually in the winter and early spring, at that period of the year when catarrhs and whooping-cough are most frequent; and, as we have seen, the chief danger of the disease is the propagation of the catarrh and subsequent bronchitis and morbid orperation, to the structure of the lungs. The differences of manifestations of the symptoms of rubeola constitute its VARIETIES, which are as follows:—

Rubeola vulgaris,	Rubeola sine exanthemate,
" sine catarrho,	" nigra.

RUBEOLA VULGARIS represents the common type of the eruption, consisting of constitutional and local symptoms, pursuing the course already described. The constitutional symptoms may be mild or severe, the local symptoms developed to a greater or less degree, and the disease may subside at the end of twelve or fourteen days, with a gradual return to health. On the other hand, if the patient be exposed to cold or neglected, the cough may increase, and the foundation be laid for a serious state of disease that may terminate fatally; or if his constitution be unhealthy, or the epidemic unusually severe, chronic disease may be established. With proper management, rubeola is commonly a mild disorder.

Occasionally the symptoms are so slight as to render it doubtful if the case be really one of rubeola; the exanthem is more or less fully developed, but the constitutional symptoms are almost absent. An epidemic of this very mild description prevailed in the spring of 1864, and the doubtful character of the disease suggested the term *rubeola notha*, or spurious rubeola, given to it by Dr. Babington.

RUBEOLA SINE CATARRHO is an example of a mild form of measles, in which its more serious symptom, that of the affection of the mucous membrane of the air-tubes, is absent. In this case, as in rubeola notha, the constitutional symptoms are very moderate, although the exanthem may be fully developed. Rubeola sine catarrho is apt to occur more frequently at the beginning or end of an epidemic than during its height, and is met with in one or more members of a family wherein the rest pass through the disease in the ordinary way. Persons who have experienced this mild form of the complaint are more than usually liable to a subsequent attack of the disease.

Rubeola sine exanthemate, called by Sydenham "febris morbillosa," is a rarer variation of measles than the preceding, and a similar example of aberration from a normal standard, the peculiarity in the present case being the existence of the fever without the exanthema. Cases of this kind are also met with more or less numerously in the course of a rubeolous epidemic.

Rubeola nigra, or black measles, is a designation derived from the color of the exanthem; the circulation through the cutaneous capillaries is slower than natural, those vessels are dilated, and the blood, robbing the tissues of their carbon, is converted into venous blood. The eruption, consequently, is purplish or livid in hue, and extravasations are apt to take place, which suggest the idea of purpura. Rubeola nigra is rare, and occurs for the most part in weakly and exhausted constitutions; the constitutional symptoms assume the character of typhus, and are sometimes complicated by effusions into the cellular tissue and into the serous cavities.

Diagnosis.—In zymotic fevers, as in fevers in general, the medical man is attracted by the dulness, the listlessness, and drowsiness of the patient. If conjoined with these symptoms of depression of power of the nervous system, there be present coryza and catarrh, and the patient has not already had rubeola, suspicion becomes stronger, and is increased if a rubeolous epidemic is known to be in existence at the time. The fourth day of these symptoms is marked by the appearance of the rubeolous rash upon the face, and its dull red and raspberry-tinted color places the question beyond further doubt: the case is one of rubeola.

Cause.—A special contagious principle or poison, sometimes sporadic, more frequently conveyed from one person to another, either by the atmosphere or by actual contact. Rubeola is the most contagious of the zymotic affections, and prevails most abundantly during the damp and cold seasons of the year, when whooping-cough and catarrhs are frequent; catarrh being a predisposing cause. The period of isolation after recovery from the illness should be at least three weeks. The most remarkable epidemics of measles which have occurred in this country are those of London in 1671, 1674, 1763, and 1768, having Sydenham for their historian; and the epidemic of Plymouth in 1741, recorded by Huxham.

Prognosis.—Rubeola is of favorable augury, and when it occurs divested of irregularity of course and complications, is a mild disorder. It is serious only when neglected, and when there exists previous disease, particularly of the lungs.

Treatment.—As the issue of rubeola involves the safety of the lungs, the patient must be submitted to rigorous discipline, so far as the avoidance of chill is concerned. He must be kept in an apartment of equable temperature (about 60°), well ventilated, but protected from draughts of cold air. If the feverish symptoms be slight, he may be permitted to be up; but even with moderate fever he would be much better in bed, and kept as tranquil as possible both in body and mind; light should be excluded from the room, and sleep encouraged by every suitable means. We may also be guided in our precautions by the previous state of health of the patient, and by our knowledge of his constitutional power. Abundant care cannot be too strongly insisted on, provided that the apartment be not too hot, nor the bed coverings oppressive.

The diet should be moderate and unstimulating, easy of digestion, and administered at regular intervals. It should consist of the usual invalid series: gruel, arrowroot, milk, beef tea, Liebig's beef tea, chicken broth, veal broth, jellies, farinaceous and egg puddings, panada, &c., selecting as much as possible those articles which are most acceptable to the taste and inclination of the patient, and carefully avoiding excess in quantity. In case of nausea and sickness, cold bread and milk will often stay upon the stomach when other articles of diet fail; or warm milk with soda water, barley water, or meat jelly. Thirst may be allayed with toast water, barley water, ice, and acidulated drinks; but care should be taken to avoid a large quantity at one time. Barley water with chlorate of potash, half a drachm or a drachm to the pint, is an admirable febrifuge drink; as also are, lemonade a little sweetened, tamarind water, raspberry vinegar with water, imperial drink; and where a tonic combination is desired, a weak bitter infusion acidulated with hydrochloric or nitromuriatic acid. When the powers of the constitution flag, the pulse becomes weak and quick, and the tongue dry and brown, we may have recourse to alcohol in addition to food, and may administer it in such form and quantity as the symptoms may determine.

It will be necessary also to watch the operation of the bowels; a mild aperient may become requisite, but the bowels are easily excited, and we must bear in mind the natural tendency to diarrhœa which is evinced at the "turn" of the disease. We may prescribe, if need be, a rhubarb or senna draught, and if the secretion of the liver be suspended, a small dose of calomel or gray powder; or if the critical diarrhœa fail in its appearance at the decline of the disorder, a gentle aperient may be administered to supply its place.

The treatment of rubeola might be summed up in two words, WATCH NATURE, were it not for a knowledge which experience has given us with regard to specific remedy, the carbonate of ammonia. As soon as rubeola is suspected or developed, and after a preliminary clearance of the alimentary canal by means of a mild purgative, five grains of carbonate of ammonia in solution in water, broth, or milk, may be administered every three hours; in severe cases it may be given oftener, every hour or every two hours; and when the symptom subside, less frequently, namely, every four or every six hours, dimi nishing the frequency of the remedy by degrees, until health is restored. Dr. Charles Witt,[1] who is a zealous advocate of the ammonia treatment, suggests that acids should be abstained from during its use.

When the ammonia treatment is not adopted, the best remedy is the liquor ammoniæ acetatis, ʒij, with or without nitric ether (ʒss), and camphor mixture (℥j); and where the bronchitis is troublesome, a few drops of ipecacuanha wine (♏x). Or the practitioner may prefer effervescent salines, with diaphoretics, with which may be combined, if necessary, saline aperients.

The local treatment of rubeola is best provided for by keeping the body covered with bedclothes, and preserving a temperature agreeable to the sensations of the patient; but where there exist pruritus and uneasiness of the skin, and when desquamation has commenced the pruritus is often very troublesome, the skin should be anointed with some simple oleaginous substance, such as lard. The lard should be applied with gentle friction to the whole body, exposing as little of the skin as possible during the operation, and the inunction may be repeated every twelve hours, or oftener if the itching should return.

During convalescence, the preservation of a wholesome temperature of the body, by means of warm clothing, is especially important, as neglect of proper precautions at this period is a common cause of the serious sequelæ which sometimes follow measles. Indeed, the necessity of shielding the patient from exposure in zymotic diseases cannot be too strongly impressed upon the mind of the practitioner.

The leading complications of rubeola are: retrocession or sudden disappearance of the exanthema, severe bronchitis, pneumonia, laryngitis and œdema of the glottis, inflammation and ulceration of the conjunctiva, inflammation of the ear tubes and vagina with mucopurulent discharge, ulceration of the mucous glands of the mouth, inflammation and enlargement of the salivary glands, chronic diarrhœa, dysentery, and rheumatism of the joints.

Retrocession of the eruption is to be treated by the application of stimulants to the skin, either stimulating liniments, such as ammonia, or cajeput, or mustard, spongiopiline saturated with a solution of mustard or the spiritus sinapis, mustard poultices, a mustard bath, or the ammonia bath.

Bronchitis, pneumonia, and the sequelæ involving the mucous membranes, the synovial membranes, and the glands, must be treated like independent inflammations of those organs, and in every instance the treatment must be combined with counter-irritation. It may be necessary to apply a blister for a longer or shorter period, and follow the blister with a poultice, or with inunction and cotton-wool; or we may prefer the counter-irritant action of the compound tincture of iodine, or of a saturated tincture. It may be necessary also to follow or combine this treatment with a tonic regimen; with the use of quinine, steel, or cod-liver oil; with the tepid or cold bath; or with sea bathing. In chronic bronchitis, change of air frequently acts lil charm; and in the absence of change we may derive advantage f the inhalation of the vapor of tar, carbolic acic, or iodine.

---

[1] "An Effectual and Simple Remedy for Scarlet Fever and Measles, with an Appendix of Cases." Third edition, 1862.

In inflammation of the fauces, salivary glands, or larynx, a pie spongiopiline or ordinary sponge squeezed out of hot water, and applied over the painful part, is the best remedy. Sometimes a j tice may be preferred; while locally the fauces may be soothe the inhalation of steam, or by the use of a gargle. In the ca young children, the lotion must be applied by means of a syri and the best adapted to the purpose is a solution of chlorate of p in barley water, or barley water accidulated with hydrochloric

Chronic muco-purulent discharges from the conjunctiva, ear-t and vagina, are relieved by bathing the parts with warm soap water, and subsequently employing a weakly astringent lotion, e Goulard, sulphate of zinc, or sulphate of alum; or a moderately st lating lotion, as of carbolic acid.

Chronic diarrhœa should be treated by an occasional dose of mel or gray powder, and judicious diet; while pains in the abdo are to be relieved by a linseed meal poultice, by a water comp or by a sedative injection. For rheumatism of the joints, the remedy is a chloroform liniment, with a bandage of flannel.

SCARLATINA.

Syn. *Scarlet fever; febris scarlatina; morbilli confluentes; rubeola rossalia; febris* Heberden; *febris miliaris rubra et maligna; febris anginosa miliaris*, Hux *scarlatine*, Fran.; *scharlachfieber, scharlachaufschlag*, Germ.

SCARLATINA, or scarlet fever, is an eruptive fever, attended constitutional symptoms, with an exanthema or rash of a scarlet c partly papular and partly suffused, and with an inflammation of fauces (angina) of greater or less severity. It is highly contag is developed between the second and tenth day after infection or tagion, has a normal course of nine or ten days, and terminat desquamation of the epidermis.

The constitutional symptoms are similar to those of rubeola: l tude, weariness, drowsiness; pains in the head, back, and li rigors, flushes of heat, nausea, and rapid pulse. To these, whicl the symptoms, of invasion, there speedily follows a general fe reaction; the eyes are bright and humid, but without lachrymat the features are swollen; the tongue is white and moist in the mi but red at the edges and tip, and studded all over with red pap the fauces are red and inflamed, the tonsils enlarged; the skin and dry; there is a short and dry cough, thirst, constipation, and h colored and scanty urine.

Immediately preceding the outbreak of the rash there are quently, restlessness, anxiety, sometimes convulsions, and somet delirium; these symptoms are relieved by the eruption. The f is generally augmented towards the evening, and not unfreque there is an exacerbation of its symptoms at the beginning of the cline of the eruption.

The exanthema, or rash, makes its appearance on the second day of the fever; the surface of the body is intensely hot and dry, more or less swollen, especially that of the face, hands, and feet; and there is a sense of tingling and itching of the skin. It is first apparent on the face, the neck, and chest; on the second day it reaches the trunk and upper extremities; and on the third day the lower extremities; on the third or fourth day it arrives at its height, and on the fifth begins to decline, following the same order as that of its invasion. The decline continues during the sixth and seventh day, and on the eighth and ninth is followed by desquamation and exfoliation of the epidermis.

On close inspection of the exanthema it is found to be composed of minute puncta and papulæ, blended by a superficial suffusion; on the face and limbs the suffusion is uniform, but on the trunk the rash is more or less patchy, and is always more vivid on the loins, the nates, and around the joints, than elsewhere. Sometimes, and constantly in certain regions of the body, the exanthema is smooth, from the presence of a moderate degree of œdema of the skin, this is the *scarlatina plana vel lævigata;* at other times, and in other situations, it is rough and papular, *scarlatina papulosa vel milliformis;* and occasionally, but rarely, there may exist an intermingling of vesicles or pustules, *scarlatina vesicularis, vel phlyctænosa, vel pustulosa.* The rash is always brighter and more vivid in the evening, when the fever is highest, than at any other time of the day.

Scarlatina makes its attack between the second and tenth day after exposure to contagion; the exanthema begins on the second day of the fever, and lasts commonly for seven days, making the whole period of the active stages of the disease nine days. On the third day of the fever the exanthema extends to the eyes, nose, and mouth, causing congestion of the mucous membrane.

Scarlatina, like rubeola, is remarkable for its extreme variation of intensity, being sometimes so mild as to be a mere trivial disorder, almost without constitutional symptoms of any kind, and at other times so severe as to be rapidly fatal. Where the exanthema is fully developed, the febrile symptoms are for the most part mild; but the most severe form of the disease is that which is accompanied with much congestion of the mucous membrane, and particularly of the fauces. The varieties of scarlatina are founded on these differences of character: the more simple form, that in which the exanthema is fully developed and the mucous congestion moderate, is termed *scarlatina simplex,* while the scarlatina attended with a severe congestion of the mucous membrane of the fauces, is the *scarlatina anginosa.* Another form of the disease is termed *scarlatina maligna,* from the dangerous nature of the affection of the throat; while a fourth is distinguished by general mildness, and by the absence of exanthema, *scarlatina sine exanthemate.* Other modifications are also occasionally met with; a child may pass through a mild form of the disorder, and in the midst of convalescence may be attacked with a severe form; the former may present as its leading feature exanthema, the latter, angina. Dr. Sims has recorded such a case, and we have seen a similar one. Sometimes scarlatina is accompanied with acute pains in the joints or in the head, and sometimes with a troublesome cough. And occasionally there is met with a form of the affection, termed *scarlatina latens* by Copland, in which the exanthem and angina may both be absent, and the disease manifested only by one of its sequelæ, such as dropsy.

In its most favorable form, scarlatina expends its violence chiefly on the skin and mucous membrane of the fauces, and then gradually subsides; but when it is interrupted in its course, when the cutaneous rash is accidentally checked, in an unhealthy constitution or unfavorable season, or when the prevailing epidemic assumes a severe character, several organs of the body are liable to be endangered by its violence; the most important of these, after the glandular structures of the throat, being the kidneys, the pericardium, the joints, and the mesenteric glands.

The morbid phenomena which follow an attack of scarlatina are termed its *sequelæ*, and are sometimes referable to the violence of the inflammation attacking the skin, as in the case of œdema of the subcutaneous tissue, and mortification of parts of the skin; sometimes to a similar morbid action taking place in the mucous membrane and resulting in chronic conjunctivitis, chronic otitis, loss of hearing and suppuration from the ears, ulceration within the nares, ulceration of the mouth and lips, ulceration of the fauces and larynx, inflammation and suppuration of the salivary glands, chronic bronchitis, chronic diarrhœa, and gangrene of the vagina or rectum; sometimes to inflammation of the lymphatic system, such as enlargement of the lymphatic glands of the neck and mesenteric glands; sometimes to inflammation of the serous membranes, as of the pericardium, the peritoneum, or the synovial membranes, and sometimes to inflammation of the kidneys, inducing anasarca and dropsy.

Inflammation of the kidneys is possibly the most serious of the sequelæ of scarlatina, and is commonly induced by too early exposure of the body to cold or damp after the decline of the fever. It is apt to occur between the tenth and twentieth day, sometimes earlier, is preceded by heaviness, headache, restlessness, and symptoms of constitutional disturbance; and these symptoms are quickly followed by œdema, commencing in the face and lower limbs, and extending by degrees to the body; the belly is swollen, and the urine, scanty in quantity, is commonly found to contain albumen, blood particles, and cell-detrita from the tubuli uriniferi.

Anasarca sometimes results from simple anæmia, and happens in weakly and lymphatic children; in this affection there are no special symptoms of constitutional disturbance, and the urine is very little altered in quantity; it is pale, and contains neither albumen, blood particles, nor epithelial cells.

The VARIETIES of scarlatina arranged in tabular order are as follows:—

Scarlatina simplex,
" anginosa.

Scarlatina maligna,
" sine exanthemate.

ATINA SIMPLEX is the typical form of the disease, in which
itutional and local symptoms are moderate, and run a regular
As already remarked, the constitutional symptoms are some-
light as hardly to deserve the name of fever, while the exan-
fully developed. This is the most desirable combination for
t, but nevertheless requires the same caution in management
re severe forms. There is always congestion of the fauces,
he mildest variety of scarlatina; and in scarlatina simplex
ts a moderate amount of swelling of the mucous membrane
throat.

ATINA ANGINOSA is distinguished by a predominance of sore
d a more severe type of the disease, more constitutional dis-
more local suffering, and an irregular exanthema, deficient
t of cutaneous congestion, and imperfect in its course.

aces are inflamed from the beginning of the attack, and often
e constitutional symptoms are developed; by the second day
sion the voice is hoarse, the throat feels rough, there is an
tion of viscous mucus on its surface, deglutition is painful
ult, and there is a sense of constriction and tightness, that
rom the throat itself to the surrounding part of the neck and
scles of the jaws. During the third and the fourth day, the
he swelling, and the constriction increase, the uvula and ton-
much swelled as to block up the isthmus faucium almost
patches of false membrane appear upon the inflamed surface,
embrane covered by these patches is apt to pass into a state
cial ulceration. The tongue is coated with white mucus, and
ver with papillæ of a vivid red color.

symptoms are accompanied with nausea, rapid respiration, a
ble pulse, parching heat of skin (104°–108°), restlessness,
ility, headache, and often delirium.

anthema is sometimes retarded to the third day of the con-
l symptoms, is irregular in the order of its appearance, and
in the amount of cutaneous congestion, showing a patchy
ver the greater part of the body, and a more uniform red-
around the joints. It sometimes disappears for a day, and
emains later than in scarlatina simplex, and is succeeded by
fect desquamation.

cline of the exanthema commonly takes place on the fifth or
, and at the same time the mucous membrane of the fauces
improve, the swelling subsides, the sloughs separate, and
e assumes a more healthy character. The restoration of the
wever, is a gradual process, and where ulceration has taken
the powers of the constitution are low, it may be delayed
l weeks.

ATINA MALIGNA, or putrid sore throat, is a scarlatina angi-
nded with extreme prostration of the nervous system, with
and deep ulceration of the fauces and adjacent parts, and
mperfect and partial exanthema. It occurs under the influ-
unhealthy state of constitution of the individual, or of un-
ygienic conditions, is highly dangerous, and commonly fatal.

This form of scarlatina is sometimes met with in the course of an ordinary epidemic, and sometimes prevails as the leading type of the epidemic. It is marked from the beginning by prostration of power, feeble pulse, restlessness, anxiety, and delirium. The fauces are not swollen, but are deeply and extensively ulcerated, the whole mouth is inflamed and aphthous, the tongue swollen and ulcerated, the pharynx and larynx more or less ulcerated, loaded with viscous phlegm, and the respiration quick and obstructed. The ulceration frequently becomes sloughing, the breath is excessively offensive, the eyes are red and sunken, an acrid discharge distils from the nose, the ears are affected with deafness, the tongue and lips are covered with a dark-brown or black sordes, and deglutition is painful and difficult. Sometimes there is diarrhœa, sometimes hæmaturia, and the scene closes in coma. Scarlatina maligna often proves fatal on the second or third day; and after death extensive ulceration is found to have occurred in the fauces, larynx, trachea, lungs, œsophagus, and alimentary canal.

The exanthema in scarlatina maligna is uncertain, irregular, and incomplete; it is late in appearance, often pale and indistinct, generally purple or livid, sometimes patchy, sometimes accompanied with petechiæ, and sometimes disappears in a few hours after its outbreak. Occasionally, after having wholly disappeared, it returns at the end of a week, and remains for two or three days, and sometimes it has been observed to return again at the end of another week.

SCARLATINA SINE EXANTHEMATE is a variety occasionally met with in the course of an ordinary epidemic; the fever and angina are present, but there is no exanthema. This form of the disease sometimes attacks the adult, or occurs in a child who has gone through the eruption in the ordinary manner; it is generally mild in its symptoms.

DIAGNOSIS.—The pathognomonic characters of scarlatina are, in the first place, the acute congestion of the fauces; secondly, the early development of the exanthem; and thirdly, the scarlet color, and diffused or patchy character of the rash. It is distinguished from rubeola by the absence of coryza and catarrh, and by the different color of the exanthem; and from variola, by the absence in the latter of angina and the development of the eruption in the form of isolated papulæ. Rubeola is more contagious than scarlatina, and more likely to appear a second time; the desquamation of scarlatina is more laminated and less furfuraceous than that of rubeola, and the early symptoms of variola are accompanied with a severe pain in the loins, which is absent in the other exanthematic fevers.

CAUSE.—The cause of scarlatina, as of rubeola and variola, is a specific poison. Like rubeola, it is favored by a cold and humid state o the atmosphere, and is therefore more common in the spring an autumn than at other seasons of the year. It also resembles rubeol in being a disease of childhood, although occasionally attacking th adult. It is somewhat less contagious than rubeola, and less dispose to affect the same person a second time. As a rule, scarlatina, rubeol and variola, when they have once run their course regularly, are n subject to recurrence; this, however, is a rule with many exceptions, but less in the case of scarlatina and variola than that of rubeola. Patients under scarlatina are, at all periods of the fever, capable of communicating the contagion, but most so during the stage of desquamation, and after convalescence they require seclusion for a month or six weeks.

PROGNOSIS.—Scarlatina is always grave; if not in its immediate symptoms, it is so in the liability to disease of important internal organs, for example, the kidneys. Nevertheless, scarlatina simplex is sometimes so slight as to disarm apprehension; not so the anginous form, which is always alarming. Sometimes the constitution of the patient is, as it were, overwhelmed with the poison, and death occurs in a few hours. Scarlatina is also rendered dangerous by retrocession, by the early evidence of weakness and prostration, by a livid appearance of the throat, and by complication with organic disease. It often deals severely with adults, especially with pregnant and recently-confined women; and, according to the observation of Dr. Peter Hood, is generally more severe in children with dark eyes and complexion than with their brothers and sisters of blue eyes and fair complexion.

TREATMENT.—On the bare suspicion of scarlatina, and certainly as soon as the disorder is declared, the patient should be put to bed; he should be kept quiet; the bed-clothes should be light, but sufficient; the apartment darkened, kept at a reasonable temperature, and properly ventilated. Two points should be looked to with especial attention, the avoidance of light, heat, bustle, noise and conversation, which are calculated to excite the nervous system of the patient; and the avoidance of draughts of cold air, which might check the development of the exanthema, or, when developed, might lead to its retrocession. The patient's head should be well raised on the pillow, and kept cool, and his body and feet warm. It will probably be necessary to keep the bed for three weeks, and the room for a week or ten days afterwards. A too early suspension of precautions should be rigorously prevented.

The diet should consist of milk, tea, broths, farinaceous puddings, and cooling and refreshing drinks, such as toast-water, lemonade, tamarind-water, soda or seltzer-water, or a weak solution of chlorate of potash, acidulated with hydrochloric acid.

The medicines likely to be required are, a mild purgative, to remove irritating ingesta or acrid secretions from the alimentary canal, and, a few hours later, a saline and diaphoretic mixture, composed of liquor ammoniæ acetatis vel citratis, spiritus ætheris nitrici, and mistura camphoræ, administered every four hours. The best purgatives for the purpose indicated are the compound jalap powder, senna, or rhubarb. And care must be taken during the action of the bowels that the patient be not exposed to chill. In cool weather a woollen gown would be preferable to one of lighter material, and the bed-clothes must be accommodated accordingly.

We must confess to a strong leaning in favor of the ammonia treatment, and, instead of salines, we would begin from the first with a

solution of the carbonate of ammonia, two or three grains for a chil
under seven years of age, and four or five grains above this age, or f
an adult; the dose should be dissolved in from two to four drach
of water, and administered every two, three, or four hours, accor
to the degree of severity of the fever; in very severe cases, e
hour. The advocates of the ammonia treatment[1] attribute to
most happy properties: it calms irritability, tranquillizes the ne
system, induces sleep, promotes the exanthema, subdues fever,
and delirium, and soothes the throat and alimentary canal. A
these virtues we may venture to add that it diminishes the qua
of viscous mucus secreted by the mucous membrane of the fa
This treatment, however, is not intended to supersede the neces
daily attention to the secretions, and the use of tonics when they s
to be required.

Dr. Peter Hood, in an excellent monograph on scarlatina, advoca
a method of treatment which he has found in the highest degree su
cessful. Attributing the nausea, which so constantly attends the inv
sion of scarlatina, to the presence of irritant matter in the stomach, h
begins with an emetic composed of ipecacuanha and sulphate of zin
the dose for a child of six years being ten grains of each, and follow
the emetic with as much warm water as the child can be made to
drink. After the action of the emetic has subsided, he administers a
purgative of scammony and calomel (gr. vj) and by way of stimulating
the emunctory action of the liver and alimentary canal, he continues
the purgative every night, in modified doses, so as to secure one pro
per evacuation daily. With children who can swallow a pill h
varies the remedy by prescribing gray powder with extract of hen
bane and the compound rhubarb pill; and when the tongue is clea
he has recourse to simple rhubarb or castor-oil as a laxative, or an
simple medicine; but as long as the tongue remains coated, which h
takes as an evidence of the presence of morbid secretions in th
stomach and alimentary canal and morbid action of the liver, h
adheres to the mercurial in one form or another. And he keeps u
the proper action of the bowels by this means throughout the who
course of the disease.

The alimentary canal being kept to its duty, his next remedy, th
staff of his treatment, is quinine; the dose, one or two grains ever
four or six hours. He combines the quinine with eight or te
minims of dilute sulphuric acid and half a drachm of compoun
tincture of bark or orange-peel. He very justly observes that quinin
alone, without the eliminatory action of the bowels, would be in
jurious, but that the combined action of the two kinds of remed
with proper attention to diet and regimen, is calculated to subdue a
the more grave symptoms of the disease, and bring it to a favorabl
termination, and without the danger of the *sequelæ* which rende
scarlatina so formidable. The reader will be struck with the soli

---

[1] *Vide* "An Effectual and Simple Remedy for Scarlet Fever and Measles," by D
Charles Witt.

se of this view of the "quinine treatment" of scarlatina, and will btless profit by Dr. Peter Hood's experience.

Dr. Hood is careful to maintain a liquid diet for his patients; the hief support being milk, sopped bread, and beef tea. Solid food is prohibited until the tongue be clean, and have remained so for a few days; and bed is to be maintained until the desquamation is over. Wine he allows to adults, but does not think desirable for children, excepting in the malignant variety of the disease, and where prostration of power is apparent. Where there is restlessness and irritability, with a clean tongue and want of sleep, he prescribes Battley's solution of opium (♏v æt. 4); for dirty-water stools, he adds a few grains of aromatic confection, with tincture of cinnamon and cinnamon-water; and for irritability of heart's action at the close of the fever, he orders one grain of Dover's powder with half a grain of powder of conium, every four hours, followed in an hour by a draught of supercitrate of potash and sweet spirits of nitre.

Burning heat of the skin is occasionally a very distressing symptom to the patient in scarlatina, and we are called upon to prescribe a remedy. Sponging with warm vinegar is sometimes used for this purpose; we have usually given the preference to sponging with a tepid solution of ammonia of moderate strength; but the remedy which is best of all suited to effect the object, is inunction with warm lard. The lard should be gently but well rubbed into the skin night and morning, beginning with the limbs, and passing thence to the trunk of the body, and at the same time avoiding the exposure of a larger surface than that immediately under the operation. The inunction may be made more pleasant by the use of benzoated lard; but common lard answers every purpose. This simple remedy not only relieves the heat and irritation of surface, but tranquillizes the whole nervous system, fixes the exanthema in the skin, assists desquamation, reduces the tendency to congestions of internal organs, and diminishes the liability to diffusion of contagion.

At the decline of the disorder, when convalescence is established, the patient's strength may be helped with mild tonics, such as the citrate of iron alone, or with quinine; a more generous diet, meat, and a little wine. He should be kept in bed as long as possible, and still longer to his room, and on resuming his ordinary dress should be warmly clothed in flannel, with a view to prevent secondary complications, which are often more dangerous than the original disease.

The angina of scarlatina is generally the most difficult part of the treatment of the disorder; the swelling of the fauces renders deglutition painful and difficult, and also impedes respiration; and the swelling of the salivary glands and adjacent parts impedes the opening of the jaws, and often seriously interrupts the circulation through the brain. This state of things has led to the suggestion of leeches behind the ears, or in the submaxillary region, and also to that of blisters; but both these remedies are highly objectionable, and should be avoided if possible. Loss of blood, by adding to the extreme weakness of the patient, might be fatal in its effects, and the irritation of blisters might increase the inflammation of the fauces. We have found inunction with lard, and a covering of cotton wool, a good substitute for both. Dr. Peter Hood recommends linseed poultices as hot as they can be borne, and repeated as often as they cool; while, for counter-irritation, we should prefer the compound tincture of iodine to the blister.

The remedies applicable to the fauces directly, are gargles and the nitrate of silver either in the solid form or in strong solution. Nitrate of silver may be used at the outset of the congestion of the throat, with the view of changing the morbid inflammation into one of a more healthy character; and for this purpose the solid stick is more serviceable than a solution. If the latter be preferred, its strength must be from twenty to thirty grains to the ounce, and it should be applied by means of a piece of sponge firmly fastened to the extremity of a handle. Not unfrequently, and always in young children, the patient is unable to use a gargle, and then it must be injected into the mouth by means of a syringe. For removing viscous mucus and sordes from the mouth and fauces, a small piece of sponge is the best instrument, and the sponge may be previously moistened with one of the solutions intended for rinsing the mouth. The solutions the best adapted for gargles are sulphuric acid, the chloride of sodium, the hypochlorate of ammonia, the permanganate of potash, the chlorate of potash, and the chlorine solution developed by the combination of chlorate of potash and dilute nitric acid, one drachm of each to eight ounces of water, or by the mixture of chlorate of potash and strong hydrochloric acid. All these gargles have the advantage of being innoxious or even beneficial when swallowed; and while acting the part of moderate stimulants to the mucous membrane, they also correct fetor. Dr. Peter Hood eschews the nitrate of silver, excepting in ulceration; and for a gargle generally pleasant to children, and soothing to the throat, recommends a pint of *thick* barley-water, with one ounce of lemon-juice and half an ounce of honey.

As a curative remedy, the most important of all is the solid nitrate of silver, and this should be applied twice in the day, and efficiently. Occasionally it is found desirable to have recourse to steaming the throat by inhalation, and we have seen great comfort derived from the inhalation of the vapor of ammonia.

In retrocession of the exanthema we may have recourse to the hot bath, and may very advantageously add a handful of mustard to the bath. We have already remarked that the chances of retrocession are very much diminished by the employment of inunction, and would suggest as a general stimulant of the skin, in the case of that event, a bath at 100°, containing an ounce of strong solution of ammonia to the gallon,[1] or where the bath was impracticable, sponging the skin with water of the temperature of 120°, containing one ounce of strong iquor ammoniæ to the quart. . After the bath or sponging, the inunction with lard might be repeated very advantageously.

---

[1] See a paper by Mr. Grantham, of Crayford, "On the Therapeutic Effects of Ammonia as a Dermic Agent in the Treatment of Disease."—*Medical Gazette*.

Where the head is much affected, as with severe pain and delirium, it will be necessary to crop the hair closely, and apply ice to the scalp. A blister on the nape of the neck or behind the ear has also been recommended, and counter-irritation of the feet and lower limbs. When the pulse is strong and hard, leeches have been suggested. These are questions which must be left to the judgment of the practitioner; but it is desirable in such cases to be assured that the cerebral congestion does not proceed from irritant matter in the alimentary canal. Dr. Peter Hood favors an emetic where that is the case, and regards the cerebral congestion as sympathetic; on the same principle, an active purge might be found useful.

When the presence of anasarca indicates congestion of the kidneys, the treatment consists of counter-irritation of the skin and alimentary canal, and the use of diaphoretics and mild diuretics. The patient must be placed in a warm bath (90°–98°), containing ammonia, twice a day; inunction must be performed after the bath; a purgative of compound jalap powder with calomel, must be administered, and repeated if necessary; the regions of the loins should be painted with compound tincture of iodine, saturated with iodine; and gentle diuretics, such as the bitartrate of potash, citrate or acetate of potash, combined with the liquor ammoniæ acetatis and digitalis, and saline aperients, should be exhibited internally.

When the anasarca results merely from anæmia, the proper remedies are chalybeate tonics, such as the citrate or tartrate of iron, with quinine, or the tincture of the hydrochlorate of iron.

In *scarlatina maligna*, the indications for treatment are the restoration and support of the vital powers, and the local relief of the fauces and the skin. For the maintenance of general power, the nourishment should be of the best kind; for example, essence of meat, and port wine, administered alternately and frequently. Any gastric irritation from accumulated ingesta or acrid secretions, should be prevented by mild but efficient remedies. The best tonics are the liquor cinchonæ with sulphuric acid, tincture of orange-peel with nitromuriatic acid, hops, .cascarilla, canella, &c. The liquor cinchonæ may be administered very advantageously in port wine. Ammonia also is as applicable to the malignant form of scarlatina as to the simple kind, and the drink of chlorate of potash (ʒj ad ℥xvj), recommended by Dr. Hunt, or the euchlorine mixture (potassæ chloratis, acidi nitrici diluti, āā ʒj, aquæ ℥viij).[1] The fauces and mouth should be gargled or syringed with the euchlorine solution, or with a simple solution of chlorate of potash, carbonate or hydrochlorate of ammonia, or common salt. These solutions may also be injected into the nostrils, to relieve the Schneiderian membrane, and reach the back part of the palate.

---

[1] The formula recommended by Sir Thomas Watson is a very useful one. Potassæ chloratis ʒij, dissolved in ℥ij of hydrochloric acid, diluted with ℥ij of water, kept a a stoppered bottle and in a dark place. Of this mixture, ʒij may be added to ne pint of water, and a dose of half an ounce or an ounce given every hour or two ours.

of blisters erived in some cases from the inhalation
found inun monia. For a hot and parched skin, the
stitute for warm vinegar, or a moderately stron
hot as th ions ammoniæ ad aquam ℥viij), an
for coun paste with gentle friction.
to the h e treated, in regard to its severit
The laid down; in mild cases tl
nitrate may be sufficient to draw forth tl
of silv or mucous membrane seem to
with might be stimulated by the amm
more a bath, or a hot bath with musta
serv warm lard, applied with modera
mus

app tions of scarlatina manifest the
tre f the brain, the larynx, the lungs a
dr mentary canal, the liver, the kidne
in s. Affection of the brain is shown
a symptoms may result from congesti
h ch inflammation of the fauces; co
o erence with the circulation where the
t and congestion from irritability.
irritation of a blister may be necessa
eeches may be serviceable. In the l
advantage from the use of sedativ
ment is especially valuable. In the oth
ation is an important remedy, and in e
leeches. When the mucous membra
congested, is swollen from œdema, t
ecessary. In congestions of the thora
the same; in diarrhœa we may derive
a large poultice, or from inunction a
ter-irritation action of ammonia may,
ation, be resorted to. In affections of t
and cotton wool are very useful: and
nitrate of silver either in solution, or fi
[illegible]

VARIOLA.

petite verole, Fran.; *blattern, pocken*, Germ
Ital.; *viruelas*, Span.

mmation of the tegumentary investme
and mucous, associated with fever of
nd. On the skin it is characterized
which pass through certain stages of p
ming, in quick succession, pimples (va
umbilicated vesicles, pustules, and ha
ing off from the eleventh to the twen
them small uneven pits, and perman
membranes it produces great congesti

of surface, and in some situations pustules, particularly in the respiratory passages. The fever of variola is of the remittent type, preceding the eruption for two days, subsiding as soon as the eruption is developed, and returning when the eruption has reached its height, namely, on the eighth or ninth day.

Smallpox admits of several divisions in relation to the origin, distribution, and degree of severity of the disease. In respect of origin it may proçeed from contagion, or be the consequence of the voluntary introduction of the variolous virus into the system, constituting the two varieties termed *natural smallpox* and *inoculated smallpox.* In reference to distribution the eruption may be *discrete,* the pustules being distinct, and scattered over the surface of the body; it may be *coherent* or *semi-confluent,* the pustules being very numerous, and, in many situations, placed closely side by side, but still distinct; it may be *confluent,* the pustules being more numerous, and in several situations so closely set, as to run one into the other, and form confluent blotches of various size and extent; or it may be *corymbose* or clustered, the clusters being three or four in number, and the rest of the skin occupied by a discrete eruption. As regards degree of severity, variola may be *benignant* or it may be *malignant;* or it may be *modified,* the pustules being altered in their number, their size, and their course, either by the nature of the contagion or constitution of the patient; or by the previous invasion of smallpox, natural or inoculated, or by vaccination. Modified smallpox is a much milder affection than the parent variola, and is termed varioloid. Another division of variola relates to its occurrence for the first time, or as a second attack, a distinction which is expressed by the terms *primary* smallpox and *secondary* or *recurrent* smallpox. Besides the preceding, we sometimes have occasion to remark, during the prevalence of an epidemic of variola, the occurrence of the fever of smallpox without its eruption, a variety which has been termed *variola sine variolis.* These terms, expressive of differences in the character of variola, are chiefly useful for the purposes of description, and as distinguishing forms of the affection which are more or less grave in their course or in their termination. The varieties of smallpox may be comprehended at a glance by placing them in tabular order, thus—

NATURAL VARIOLA.

Variola discreta,
" semiconfluens,
" confluens,
" corymbosa,

Variola maligna,
" benigna,
" sine variolis,
" anomala.

MODIFIED VARIOLA.

INOCULATED VARIOLA.

The course of variola admits of consideration in five successive periods, this division being alike convenient in the treatment and description of the disease. The periods of variola are those of incubation; invasion or primary fever; exanthemation or eruption; secondary or suppurative fever; and decline, including incrustation and decrustation.

I. The *period of incubation* comprehends all that space of time which intervenes between the exposure of the body to infection or contagion, and the invasion of the disease. In very severe cases the period of incubation is short; in the milder forms, on the contrary, it may be longer. The limits commonly assigned to this period are from five or six to twenty days, but Marson fixes it at twelve days.[1]

II. The *period of invasion* or *primary fever* is marked by symptoms which indicate serious constitutional disturbance. It commences with languor and lassitude, with shivering and horripilation, pains in the head, in the loins,[2] and in the limbs; the skin is hot, and either dry or moist; the conjunctivæ suffused; the pulse and respiration quickened; there is thirst and loss of appetite, with a white and coated tongue, dotted with red papillæ; nausea, often vomiting, constipation, pain and heat at the epigastrium, restlessness, and universal prostration. To these succeed, though various in degree in different individuals, oppression of breathing, cough, lethargy, and sometimes coma. The tongue, at the commencement of the period, usually white, soon becomes red at the point, and subsequently over its entire surface. In children, convulsions not unfrequently ensue at this stage of the febrile symptoms. Throughout all the periods there is exacerbation of the febrile symptoms during the night.

In confluent smallpox the symptoms of invasion attain their highest degree of severity, there is more sickness and vomiting, the prostration of the system is greater than in the discrete variety; the tongue and lips are parched, and covered with sordes; the heat of skin is excessive; convulsions are more frequent, and sometimes there is diarrhœa.

The period of invasion lasts forty-eight hours or two days, and its symptoms are remarkably lessened by the succession of the eruptive period.

III. The *period of eruption*, or exanthemation, comprehending the full course of development of the exanthema to the complete maturation of the pustule, by Marson termed the stage of maturation, the "stadium floritionis" of Hebra, is often ushered in by a manifest exacerbation of the constitutional symptoms, which are suddenly and immediately relieved by the outburst of the eruption; the oppression and languor are no longer felt, the nausea and sickness cease, the pulse returns to the natural standard, and is full and regular. The eruption first appears upon the lips and forehead, and then upon the rest of the face; from the face it proceeds to the neck and arms; from latter to the trunk, and from the trunk to the lower extremities, entire body being pervaded in the space of twenty-four hours.

---

[1] *Vide* article Smallpox, in Reynold's System of Medicine, vol. i., 1866, by James Furness Marson.

[2] Chomel regards the pain in the loins, which he refers to the kidneys, as pathognomonic. Heberden observed that acute pain in the loins was generally followed by a severe attack of the disease; when the pain was higher in the back the disorder was milder; and the most desirable indication was the absence of pain. Marson considers the pain in the loins to result from the passage of the variolous poison through the vessels of the kidney, thus exciting a painful state of the nerves of that organ.

The development of the eruption is indicated by the appearance of all red points,[1] which soon become conical in form, and hard to the ich, and are disseminated over the surface in numbers proportionate the subsequent pustules. Thus, in the discrete variety the spots scattered and distinct; in the coherent kind they are numerous d clustered, like the patches of rubeola; while in confluent variola y are closely aggregated, and so abundant as to diffuse a general lness over the surface. The skin is hot, tense, and shining. The l spots soon become raised, and by the second day of eruption urth of invasion) have the appearance of small conical papulæ (vari), th red and inflamed bases, and transparent and vesicular points. the third, fourth, and fifth day of eruption (fifth to seventh of insion), the papular elevations, with their inflamed bases, go on prossively enlarging, the vesicles pass from a conical into a depressed d indented or umbilicated form; their contents, which were at first ransparent lymph, become whitish and milky, and a thin layer of ite coagulum is formed on the derma. The umbilicated character apparent in many of the vesicles on the third day of the eruption, d by the fourth or fifth a distinct areola is apparent around each. ring the sixth, seventh, and eighth day the lactescent contents of vesicles are converted into pus; the vesicles assume a progressively per tint of yellow, and lose their umbilicated form, becoming at t spheroidal and then somewhat flattened.

Similar phenomena may be observed to be taking place at the same e in the mouth and pharynx; the mucous membrane is red, swoll, and congested; there is soreness of the throat, and painful degluion; the respiration is somewhat impeded in consequence of the tension of the inflammation to the larynx and trachea; the voice is rse and weak; and there is frequently a hard, dry, and troublee cough. The eruption is developed in the larynx and trachea, the pharynx and fauces, and on the tongue, in the form of white ints, which become converted, first into vesicles, then into pustules.

In the confluent variety the remission of febrile symptoms is imrfect, the eruption often appears a day earlier than in the discrete n, the papulæ are less raised, but so numerous as to give rise to a neral swelling of the skin, which is of a deep red color, shining and ulated. The incipient pustules constitute one continuous vesicle r the inflamed surface, the vesicle being raised by the effusion of or sanguinis or coagulable lymph beneath the epidermis. This id, at first transparent and limpid, becomes milky and opaque, and hin whitish pellicle of false membrane is deposited on the derma, l may be seen through the raised epidermis. Subsequently the ique lymph is changed into pus, and, on the face, the raised epider frequently begins to desiccate into a thin yellowish crust before formation of pus is completed; the pus in this case is effused beneath the crust, giving to it additional thickness, and a characteristic brownish hue.

---

[1] By some writers these points have been compared to the spots produced by the of the flea.

The confluent and the discrete variety of smallpox frequently occur together in the same individual, the eruption being confluent on the face,[1] and discrete on the rest of the body. When the confluent form extends to the mouth and pharynx, the mucous membrane is covered with pustules, deglutition is rendered exceedingly painful, and respiration is seriously impeded. In the trachea the eruption gives rise to cough, and in the nasal passages to sneezing and catarrh. On the eyelids the pustules produce great tumefaction and severe inflammation of the conjunctiva.

Suppuration is first perceived on the face, whence it extends to the rest of the body, showing a disposition to affect those parts first which possess the thinnest and most delicate skin. For this reason it is that the feet and hands are the parts last observed to undergo the suppurative change. The completion of the suppurative stage on the eighth day of eruption is attended with considerable pain and throbbing, with a vivid redness of the skin, with great tumefaction, and a distressing sensation of tension of the integument. The swelling affects, in the first instance, the head and face, from these it extends to the trunk and limbs, and from the latter to the hands and feet. The eyelids are often so much swollen as completely to bury the eyes; the nose and lips are much enlarged; there is swelling and congestion of the mucous membrane of the mouth, and (in the adult) salivation;[2] the lining membrane of the alimentary canal sympathizes with the general irritation of the mucous surfaces, as may be inferred from the presence of diarrhœa. And the nervous system is greatly depressed, as is shown by listlessness and lethargy.

The eruptive period occupies eight days; one corresponding with the various stage, four with the vesicular, and the remaining three with the pustular stage.

IV. The *period of secondary* or *suppurative fever*, corresponding with the maturation or full development of the pustules, is reached on the eighth day of exanthemation, and continues until the eleventh day, during which time the pustules burst and give exit to a portion of their contents; to be followed by desiccation of the pustule or incrustation, and, subsequently, by the fall of the crust or decrustation.

In mild cases this stage is accompanied with moderate delirium; but in such as are severe the tongue becomes brown, the symptoms assume the low typhoid type, there is hard cough, with hæmoptysis, and sometimes hæmaturia. In confluent smallpox the secondary fever is developed on the eighth or ninth day; the symptoms are severe, and often accompanied by restlessness, a dangerous symptom, which increases towards night.

---

[1] The eruption is always most confluent on those parts of the body where some external source of irritation is added to that of the disease. Hence the eruption is most abundant on the face, hands, buttocks, and inner sides of the thighs of children. Sydenham remarks, that if there be 10,000 pustules on the entire body, 2,000 of these will occupy the face.

[2] Marson observes, that "patients who have the face a good deal swelled for four days, who have pretty free salivation, and a very tender skin. nearly always do well."

Desiccation of the pustules is indicated by subsidence of tumefaction of the skin, by the drying up of the pus and purulent discharge produced during the preceding period, and by the conversion of these fluids into scabs of various thickness. Desiccation commences on the face much earlier (eighth day of eruption) than on the rest of the body, and it not unfrequently happens that crusts are present in this region before the pustules have attained maturity on the limbs. The crusts are formed in two ways, either by rupture of the pustules and desiccation of the purulent discharge which is poured out by the exposed and ulcerated surface, or by desiccation of the entire pustule with its investing epidermis. The former is the more frequent method of their production. When the crusts fall (decrustation), an event that occurs upon successive parts of the body, from the eleventh to the fourteenth day of eruption, the skin beneath is of a deep red color, retaining this hue for several weeks, and the newly-formed epidermis is thrown off by repeated desquamation. The cicatrices also which have been produced by the ulcerations now become apparent, and increase in depth as the swelling of the skin subsides.

In the confluent variety, as has been already mentioned, the crust on the face commences before the conclusion of the suppurative process, often as early as the eighth or ninth day of the eruption. This extensive crust forms a complete mask to the features, and remains attached for ten or twelve days. When it falls off, the skin beneath presents a vivid red color, and desquamates freely, bringing into view a surface more or less disfigured with deep pits, and seamed with extensive cicatrices. The crusts of confluent smallpox are softened with the fluids poured out by the inflamed skin, and their fall is not completed till the twentieth or twenty-fifth day.

The desiccation of the pustules of smallpox is attended with severe itching, which induces the patient to scratch, and often to tear the surface with his nails. By this proceeding hemorrhage takes place from the ulcerated surface, and the drying of the blood gives rise to black discoloration of the scabs which form over the wounded parts. The desiccation of the pus and of the purulent discharges is accompanied with a nauseous and offensive odor.

It is remarked by Simon, that the urinary secretion of variola undergoes changes having relation to the various stages of the disease. That, in the beginning, when the fever assumes the character of synocha, the urine is diminished in quantity, and increased in specific gravity; its color is deep and red; it is frequently turbid, and often contains a small quantity of albumen. In the eruptive stage, as ascertained by Becquerel in five cases in which the symptoms were severe, "the urinary secretion was diminished, and amounted on an average to only 23.5 ounces in twenty-four hours. The specific gravity had not however, increased so much as might have been supposed, being only 1020.6. It frequently threw down uric acid precipitates, either spontaneously, or on the addition of nitric acid, and in one case a little albumen was observed. "According to Schönlein, in the first stage of variola, it is of a reddish-brown tint; on the third or fourth day a sweat of a peculiar and strong odor is observed, and the urine contains a turbid, apparently purulent mucous sediment, of an unpleasant odor."

"During the suppurative stage of variola, Becquerel observed that urine retained the synochal character as long as the symptoms continued." And in cases in which this fever persisted until death, the state of the urine also remained the same. Sediments and frequently purulent mucus occur in the urine of this period. "During the period of desquamation the urine is either normal or anæmic." In the nervous form of variola, the urine is very changeable, and often dark. "In the putrid form the urine appears decomposed, ammoniacal, and not unfrequently of a dark red color, from the presence of hæmatin."[1]

VARIOLA CORYMBOSA.

The discrete, the semi-confluent and the confluent forms of variola are distinguished by the number of their pustules, and *cæteris paribus* are dangerous in proportion to the amount of eruption. The corymbose variety of the disease, on the other hand, is remarkable, not for the number, but for the manner of distribution of the pustules; "they appear in clusters, or, it may be that only a single cluster is formed; while in other parts of the body the eruption is perhaps but sparsely scattered. It generally happens there are two or three patches, about the size of the palm of the hand, in different parts of the body, in which the pimples are as closely set as could be; and in the immediate neighborhood of each patch the skin is for some distance free from eruption, or nearly so, a few spots only of the disease being formed. There is a great tendency to symmetry in this form of the complaint; when a patch is formed on one arm or leg it often happens that a similar patch is formed on the same part of the corresponding limb on the opposite side. In some instances there are numerous corymbose patches in different parts of the body, about the size of a half-crown or five-shilling piece."[2] Variola corymbosa is rare; in thirty years, one hundred and four cases only were admitted into the London Smallpox Hospital, of which sixty-one died. Of the one hundred and four cases, seventy-four had been vaccinated, and twenty-nine were unvaccinated. "When these cases seem to be recovering," says Marson, "very frequently some dangerous complication arises to mar our fair hopes of a successful termination of the malady, and, generally, under more favorable circumstances, there is a long and tedious convalescence."

VARIOLA MALIGNA.

Syn. *Variolæ hæmorrhagicæ seu nigræ.*

Variola maligna is distinguished from other forms of the disease by the manifestation of a morbid change in the blood, a change of composition or dyscrasis. The blood is more fluid than natural, loses its power of coagulation, is deficient in fibrin, and resembles serum holding blood corpuscles and coloring matter in suspension. With these alterations in its plastic properties, the blood exudes through the capillary vessels, occasioning hemorrhages from the mucous membrane, from the conjunctiva, nose, mouth, air passages, alimentary canal, and the urinary and uterine cavities. It escapes into the tissue of the mucous membrane, as of the conjunctiva, and into that of the derma, producing ecchymoses; and it tinges the contents of the vesicles and pustules of the eruption, variolæ hæmorrhagicæ, giving them a black color, variolæ nigræ. With this serious change in the blood the powers of the constitution are excessively prostrated, the face is pale and shrunken, the expression of the countenance anxious, the respiration quick, the heart fluttering; and the patient may die before the eruption is developed. The eruption, when it appears, is of the confluent kind, but late in occurrence, and tardy in development, never reaching the state of true pustule, and very commonly terminating fatally on the fifth day; while the constitutional symptoms evince absence of power and debility.

---

[1] Simon, vol. ii. p. 282.

[2] Marson, *loco citato.*

VARIOLA BENIGNA.

Syn. *Variola papulosa, verrucosa, cornea; wart-pock; horn-pock; stone-pock.*

In the midst of an epidemic of variola, and in persons unprotected by vaccination, a modified eruption is sometimes met with which is remarkable for its mildness, for the brevity of its course, and for its arrest of development at an early period, possibly the papular stage, in this case giving rise to a hard and verrucous papule. Such a miscarriage of the eruption is the common consequence of vaccination or variolation; but, under favorable circumstances, it may also occur where no vaccination has been practised. The primary fever may be as severe as that of ordinary smallpox; but on the third or the fourth day of eruption the constitutional symptom suddenly subside, and the majority of the pustules retain their papular form, while others, which have run into the vesicular stage, shrink and dry up, and only a few become true pustules. In a case of this kind there is no secondary or suppurative fever, and no pits or marks are left upon the skin.

VARIOLA SINE VARIOLIS.

Syn. *Febris variolosa.*

This form of variola is rare; it has, however, been observed during the prevalence of an epidemic of variola, and is characterized by the presence of the constitutional symptoms and mucous inflammation of that disease without the cutaneous eruption. Sydenham assigned to this affection the name of variolous fever, and the accuracy of his observations has been confirmed by subsequent writers. Rayer remarks that he has never seen an instance of this variety of smallpox.

VARIOLA ANOMALA.

Syn. *Variolæ anomalæ.*

Variola may be diverted from its normal course by a variety of circumstances affecting the bodily condition of the patient. " We have seen it," says Marson, "in conjunction with scarlatina, measles, urticaria, syphilis, bronchitis, pneumonia, phthisis, dysentery, &c. Pregnancy may be mentioned as one of the anomalies; and another, the existence of smallpox on the fœtus at birth, which must have gone through the stage of incubation, the primary fever, and early days of eruption before it was born."

MODIFIED VARIOLA.

Syn. *Variola variolodes; varioloid; variola varicelloides.*

When vaccination was first introduced into practice by Jenner, it was expected that the new operation would become a complete preventive of smallpox; or, at least, that it would exercise a controlling power over the constitution similar to that of smallpox, that is to say, that an attack of smallpox after vaccination would take place as rarely as an attack of smallpox after smallpox, or after smallpox inoculation. Experience, however, has proved, unfortunately, that this expectation is unfounded in regard to both these propositions, for smallpox does occur after vaccination, and much more frequently than after variolation or variola; nevertheless, vaccination, when properly performed, exercises a powerful controlling influence over variola; in many instances it protects the individual from an attack of the latter disease; and when it fails to prevent it entirely, mitigates, or modifies the severity of the disease.

Recurrent smallpox, in other words, smallpox after a previous attack of smallpox is known to be rare; but cases of the kind do sometimes happen. "The Smallpox Hospital," says Marson, "has been founded 119 years; but there is no record of a patient having been admitted there twice, each time suffering from smallpox." And the same author quotes as an example of recurrent variola the following striking illustration: "An Irishman, the son of a medical officer in the army, who had been vaccinated in infancy by his father, and had a large cicatrix remaining from the vaccination, and who was attended by his father for smallpox in early life, and bore decided pits of the disease; in 1844, at twenty-three years of age, was admitted into the Smallpox Hospital with severe confluent smallpox, of which he died." Again, at a time when half the population was inoculated and half vaccinated, the proportion of cases of smallpox admitted into hospital was one for the hundred after inoculation, as against fifty-three per cent. after vaccination.

On the other hand, if we turn to the protective influence of vaccination, as shown by the experience of the London Smallpox Hospital, we find that, taking three classes of patients, the vaccinated, the unvaccinated, and the inoculated, the vaccinated exceed the unvaccinated in number; while of those who have been inoculated or have undergone variola the number is very few. Thus, of 5797 cases of smallpox the proportion of vaccinated was 3094, or fifty-three per cent.; and of unvaccinated, 2654, or forty-five per cent.; while of those previously variolated the number [illegible] only 47, or less than one per cent. The same records infor [illegible] the number of vaccinated persons attacked with smallpox is progressively; that from 1835 to 1845 the proportion was forty-four per cent.; during the following decade, namely, 1855 to 1865, seventy-eight per cent.; and during the two years 1863–4, eighty-four per cent., that is, nearly double the number registered during the decade 1835–45. It is impossible, therefore, to resist the conclusion that smallpox occurs very frequently after vaccination, much more frequently, in fact, than could be desired by those who have at heart the interests of public health.

It would appear, besides, that smallpox after vaccination not only occurs frequently, but is also frequently fatal. Thus, out of 4896 cases, the number of deaths was somewhat more than six and a half per cent.; and the question naturally arises, Were these persons properly vaccinated? This question is answered by Marson, as follows: He arranges the 4896 cases in five principal groups, namely, patients having *one* perfect vaccine cicatrix, numbering 2001; *two* cicatrices, 1446; *three*, 518; *four*, 544; and a remainder of 370, said to have been vaccinated, but having no cicatrix; and the proportion of deaths is found to correspond with the number of perfect cicatrices as confirmative of the degree of efficiency of the vaccination; thus, in the case of one cicatrix, the number of deaths was 7.73 per cent.; two cicatrices, 4.70 per cent.; three cicatrices, 1.95 per cent.; and four cicatrices, only 0.55; while the absence of cicatrix was indicated by the figures 23.57 per cent. We are thus led to the conclusion that smallpox, although not altogether prevented by vaccination, is yet favorably modified by that operation.

We may now inquire in what the modification or mitigation of smallpox consists, that constitutes the basis of modified variola. Modified variola has been termed "varioloid," but Marson very reasonably objects to this term; it is not *like* variola, he observes, it *is* variola; variola diverted from its natural course through the influence of vaccination. And that diversion sometimes brings it to the very confines of mildness, and suggests a comparison with the harmless vesicular exanthema of children, termed varicella. Hence Gregory employed the term variola varicelloides; but if modified variola be not varioloid, it may be equally objected that neither is it varicelloid; and it is best to adhere as much as possible to the three simple terms, variola, modified variola, and varicella.

In the consideration of variola we have a certain fixity of standard; we have the same also in varicella; but in modified variola there is a wide range of variety, sometimes verging on variola and sometimes on varicella, which has given rise to considerable perplexity, and has been the occasion of attaching the term varicella to many forms of the eruption which in reality appertain, not to varicella, but to variola. To be sure of our diagnosis, the safest course would be to determine the special characters of varicella; and everything which is more than varicella we may consider to belong to modified variola; nevertheless, with all our care, we shall find the question of diagnosis in these cases not a little difficult and obscure. Varicella is an affection of children; it is a vesicle which rises from a red base and attains its full size, that of a small pea, within twelve hours; it is preceded by constitutional fever of one day's duration, generally very slight and sometimes imperceptible; a number of vesicles are produced on successive days for four days; the vesicles are remarkable on the first day for their tenuity and glass-like transparency; on the second and third, they become opalescent and milky; on the fourth day they begin to collapse, the cuticular dome hardens into a thin crust, which subsides upon the base of the vesicle; and two days later, the scab exfoliates, leaving a smooth surface without hardness and without depression. The whole course of the disease is accomplished in a week. Occasionally a slight areola is apparent on the second and third day; occasionally the contents of the vesicle become semi-purulent, especially on the face and hands, or where irritated by rubbing or scratching. The feverish symptoms subside immediately the first eruption appears; the tongue is clean, the appetite good, the circulation undisturbed, and there is no secondary fever. Such is varicella, its contagious principle being distinct from that of variola.

The modifications of modified variola are chiefly exhibited in the curtailment of the disease. While natural variola has its three principal stages, namely, primary fever, eruption, and secondary fever, modified variola has only the two former, namely, primary fever and eruption. We have already seen, in the benignant form of natural variola, the reduction of the disease to these two stages, namely, primary fever and eruption, by natural causes; and in modified variola, we recognize a mitigation of the disease by the influence of vaccination to a similar mild type of the disorder. In modified variola the primary fever is very commonly as severe as that of natural smallpox, but usually less. The eruption, generally discrete, may also be confluent; it makes its appearance with the follicular puncta, the hard and granular papules; but it may stop suddenly at the papular stage, or it may proceed onwards in its development and stop at the vesicular stage, or it may still run onwards and reach the pustular stage. When it was thought desirable to draw a strong line of distinction between variola, and that which was only seemingly variola, the forms just referred to were termed varicella, varicella papularis, varicella vesicularis, and varicella pustulosa. But with our present knowledge, we find it better to restrict both variola and varicella to their proper limits, and distinguish the intermediate forms, occurring after vaccination or variolation, as modified variola. It follows, therefore, that modified variola may be papular or vesicular, or it may be pustular.

VARIOLA VARIOLODES PAPULARIS is post-vaccinal or post-variolous smallpox arrested at the papular stage; the primary fever may be severe or insignificant; it subsides with the development of the eruption, and the latter is composed of red puncta and papulæ, the papulæ being hard and more or less prominent, as in variola benigna. The papulæ remain persistent for a few days and then decline; while here and there a few of the papulæ may run on to the vesicular or pustular stage, especially on the face and hands, or when the eruption has been subjected to external irritation.

The papular form of modified variola is identical with variola benigna in every respect, excepting the modifying cause, and has received similar synonyms; for example, variola cornea, varicella papularis, verrucosa, solidescens; horn-pock, wart-pock, and stone-pock; and in order to determine the correct diagnosis of the disease, we must ascertain whether the patient has previously had the smallpox, or has been more or less successfully vaccinated.

VARIOLA VARIOLODES VESICULARIS belongs to the vesicular stage of variola, and corresponds with varicella coniformis of Willan. As with variola variolodes papulosa, the primary fever may be as severe in this variety as in ordinary smallpox, but the eruption is arrested at the vesicular stage, and declines after five or six days' continuance. A few of the vesicles generally run on to the pustular stage, especially on the face.

VARIOLA VARIOLODES PUSTULOSA is a modified variola aborted at the pustular stage; sometimes the pustules retain the conical figure of the early vesicle; at other times the pustule expands into a globe of the size of a small pea; and in both these cases the contents of the vesicle are semi-purulent rather than purulent, while a more advanced form possesses the proper umbilication of variola, and retains that character to its close. The conical and the globular forms are usually milder in their character than the umbilicated variety, but this consequence is by no means certain; the primary fever may be severe in all; the pustules are surrounded by an inflamed areola; and the fall of the scab is succeeded by a somewhat hardened base, a red congested mark, and frequently a permanent pit. The globular form of the eruption is the varicella globularis of Willan; the hives or swine-pox of popular language.

INOCULATED VARIOLA.

The intent of the operation of inoculation is to bring some portion of the fluid contained within the smallpox vesicle into relation, either with the papillary surface of the derma, or with the tissues situated immediately beneath the epidermis of a sound person. When this purpose has been effected, the inoculated particles dissolved in the fluids of the tissues are conveyed by imbibition into the system, and communicate to the whole mass of the blood a disposition to the production of matter of a similar kind.

The local signs indicating that the inoculation has taken effect are first perceived on the third day from the operation, when a slight blush of redness is seen around the puncture; this is accompanied by a trifling degree of itching, and the skin feels hard and dense when touched with the finger. On the fourth and the fifth day these signs continue gradually to increase; there is a sensation of prickling and tingling in the inoculated spot, and a small elevation begins to be formed in the centre of the areola. On the sixth day an incipient pustule is produced by the effusion of liquor sanguinis beneath the epidermis, the vesicle at this period begins to be depressed at its centre, and to assume the umbilicated appearance. On the seventh day there is a tenderness of the integument around the vesicle, and some degree of pain on moving the arm; the vesicle begins to look whitish and opaque; the contained lymph quickly gives way to the formation of pus, and the vesicle is surrounded by a purplish areola. By the ninth or the tenth day the pustule has lost its umbilicated character, and has attained its perfect development. After the completion of the pustule the areola declines in redness, and its contents desiccate, the desiccation taking place during the period intervening between the twelfth and the fifteenth day, and forming a scab of a deep brown color, and considerable thickness. The crust is thrown off during the period ranging from the twentieth to the twenty-fifth day, and is succeeded by a strongly marked cicatrix, which remains apparent for the rest of life.

The period of invasion of the constitutional symptoms in inoculated smallpox usually commences on the ninth day. They resemble in character those of ordinary variola, but are mild, and sometimes so slight as to be scarcely recognizable. Instances are occasionally met with in which the symptoms of invasion are developed, and followed by eruption, without any signs of inflammation in the inoculated part, and consequently without the formation of a pustule.

The period of eruption in inoculated smallpox is irregular, the eruption appearing generally on the second or third day from invasion, or on the eleventh or twelfth from inoculation. Occasionally it is observed at the end of a week after inoculation, and sometimes is protracted to a fortnight. The eruption is ordinarily very slight, sometimes failing altogether, or being scarcely perceptible; while, in rare instances, it may occur at several successive periods, or the confluent variety of eruption may be developed.

The eruptive period of inoculated smallpox is sometimes complicated with an erythematous inflammation of the skin, constituting variolous roseola.

COMPLICATIONS OF VARIOLA.

Hitherto the favorable course only of variola has been described, but the disease is not unfrequently attended with *complications*, which give it the character of a dangerous and, often, fatal disorder. These complications may occur during any one of the five periods into which the progress of the affection has been divided; and may have for their seat, the nervous system, the blood, the mucous membranes, the serous membranes, the eyeball, the tongue, or the cellular tissue.

Instead of pursuing the milder course already described, the period of invasion is occasionally marked by symptoms of excessive severity, the accompanying fever runs high, the rigor which precedes it has been long and enduring, and the pains in the head, the chest, the præcordia, and the loins, are so violent as to lead to the suspicion of inflammation of organs situated in those regions. There is sometimes delirium and coma, at other times convulsions; and death may occur before the eruptive stage is established. In cachectic states of the system the period of invasion is sometimes complicated with passive hemorrhages from the mucous membranes and from any trifling wound of the skin, and by petechiæ in the tissues of both structures.

The period of eruption, like the preceding, is liable to its accidents; instead of the favorable course already noted, serious congestions of one or more of the internal viscera may ensue. Sometimes the congestion is directed upon the brain and spinal cord, producing twitching of muscles, restlessness, convulsions, or coma; sometimes on the lungs, causing bronchitis, pneumonia, or pleurisy; sometimes on the mucous membrane of the alimentary canal, giving rise to diarrhœa, dysentery, or hemorrhage; and sometimes upon other of the abdominal organs. In the cachectic diathesis, passive hemorrhages and petechiæ may accompany this period; and under any of the above complications, the case may prove fatal before the completion of the eruption. The eruptive process is liable to suffer seriously by these complications; thus, the variolous vesicles, instead of progressing, become stationary and flaccid, or distended with a sanguinolent and serous fluid.

The period of suppuration, as it is the most severe in its symptoms, is also the most dangerous in its complications, and the most frequently fatal in its results. Alarming symptoms sometimes appear with astonishing rapidity, and destroy life in a few hours, or even in a shorter period. Affections of the brain, of the larynx, and of the trachea, are most to be apprehended during this period. When these secondary affections are severe, the pustules remain stationary, or become flaccid, or are converted into sanguinolent bullæ; sometimes they are accompanied with petechiæ and passive hemorrhages, and in rare cases disappear by the absorption of their purulent contents. The latter occurrence is always fatal. Other dangerous indications of this period are, the absence of tumefaction and redness of the skin, the absence of salivation, the appearance of the brown tongue of typhus, restlessness and anxiety, mortification of any part of the skin, &c.

The termination of variola is a period of much anxiety; for when the disorder has run favorably through its stages, and the danger of the disease has apparently passed away, secondary affections are not uncommonly developed, as consequences of the variolous inflammation. Such are, chronic inflammation of the various mucous membranes, producing otitis, deafness, ophthalmia, opacity of cornea, staphyloma, ulceration of cornea, œdema glottidis, hæmoptysis, pulmonary tubercles, chronic bronchitis, pneumonia, pleuritis, empyema, chronic diarrhœa, &c., glandular enlargement, caries of the bones of the face, subcutaneous abscesses, furuncles, erysipelas, gangrene of the skin, gangrene of the genital organs, disease of joints, menorrhagia, miscarriage, hæmaturia, abscess of the kidney, and numerous other sequelæ. The cause of these various complications must be referred to some peculiarity of constitution, and cannot be explained by ordinary circumstances. Sometimes they would appear to depend on the vicissitudes of season; the depth of winter and the height of summer being most frequently attended by adverse consequences.

PATHOLOGY.—On examination after death of those who have fallen victims to smallpox, several of the internal organs are found to present traces of congestion, particularly the brain, the lungs, and the alimentary mucous membrane. The tissue of the lungs is generally found congested and infiltrated, and the serous coat of the blood-vessels stained of a deep red color. Pustules are discovered upon the mucous membrane only when the patient chances to perish at the commencement of the suppurative stage. At a later period they are usually lost, on account of the early rupture of the epithelium, which, from its thinness and softness, is less resistant than the horny epidermis. For the same reason, pustules on the mucous membranes never attain a size equal to those of the cutaneous surface, and rarely contain pus. When ruptured, the surfaces occupied by these pustules are found to be covered with loose laminæ and shreds of false membrane.

The situations in which pustules have been observed on mucous surfaces are, the extremities of the alimentary canal, where the epithelium is thick, namely, in the mouth, pharynx, œsophagus, and rectum; Rostan detected them throughout the entire intestinal canal on the respiratory mucous membrane, namely, in the larynx, trachea and bronchi, and in the urinary bladder.

The form of the pustule of smallpox is strikingly modified in reference to the seat of its development. Thus, on the face, when the pustules advance very rapidly to maturity, they are flat and non umbilicated. On the palm of the hands, and on the palmar surface of the fingers, they rise gradually from the surface, are but little raised above the level of the surrounding skin, and are also non umbilicated. On the sole of the feet, again, they are large in extent and still more flat than the preceding, appearing like purplish disks with a white margin, and non-umbilicated. Usually the umbilicated centre presents a reddish or brownish tint, and sometimes, though rarely, is perforated by the shaft of a hair.

When a well-formed and mature pustule is examined by dissection it is found to be divided in its interior by a transverse septum into two chambers, both containing pus. The upper chamber is the larger of the two, and they communicate with each other, to a greater or less extent, by the rupture of the transverse septum around its marginal border. The epidermis, forming the superficial boundary of the pustule, is the segment of a sphere, and continuous by its circumference with the cuticle covering the adjoining skin. The transverse septum is a layer of false membrane, of a whitish color, which was deposited on the derma at an early stage of the pustule. Subsequently this layer becomes separated from the derma, and raised by the formation of pus beneath it, and at the same time it is broken around its edges, and permits the pus of the deeper cavity to communicate with that already contained in the superficial chamber. I consequence of the peculiarity in the mode of its production, th layer of false membrane generally retains permanently the umbilicate form of the primitive pustule, and is thinner at the centre than toward its circumference. When the septum is removed, the deep chambe is brought into view, and the depressed and sometimes ulcerated bas ock exposed. The surface of the base is of a bright or purplish or, and highly vascular.

difference of opinion subsists with regard to the cause of the ated appearance of the pustule of variola during its early Dr. Heming many years since attributed it to the perforation pustule by the efferent duct of a sebiparous gland. Velpeau, elieves that the principal seat of smallpox is the follicles of the a, would, we apprehend, entertain the same opinion. Other ers believe it to be produced by the pores of the skin, and Rayer it to the attachment of the false membrane. We agree with peau that the follicles of the skin are the primary seat of the vasular congestion, that this congestion gives rise to the production of e papules or vari, and consequently that the epidermal sheath of the llicle is the probable cause of the umbilication of the smallpox icle. When the vesicle is examined at its height of development is found to be multilocular in structure, and, when divided by a nsverse section, exhibits an appearance which Gendrin has comred to a spice-box, while Bousquet likens it to a severed orange.

DIAGNOSIS.—The precursory symptoms of smallpox are liable to be istaken for simple fever, or inflammation of such of the viscera as y chance to be most affected. Pains in the loins, according to omel, are pathognomonic; vomiting is more usual; pains in the ibs are somewhat greater than in other exanthemata, and convulns in children more frequently. The prevalence of an epidemic of disease, or the previous exposure of the individual to the influence contagion, are of themselves calculated to raise suspicion in the d of the practitioner before the true nature of the symptoms is fessed by the appearance of the eruption. When first developed, eruption presents considerable resemblance to rubeola; but from latter it may be distinguished, as well by the nature of the preus symptoms as by the more decidedly papular character of the ption, and the rough or granular and gritty sensation which the ipient papulæ communicate to the hand. It is utterly impossible confound the mature pustules of smallpox with any of the pustular ptions of the skin. Marson remarks that the diseases with which allpox is most frequently confounded, are, measles, febrile lichen, icella, and some forms of continued fever.

CAUSES.—It is stated by Moore, in his "History of Smallpox," that disease existed in China and Hindostan more than 1000 years ore the birth of Christ. After a long period it appears to have de its way into Arabia, and to have shown itself in the Arab host at siege of Mecca, in the year of the birth of Mahomet, 569. Purng the track of armies, we find it raging in Egypt in 640, and subuently following the victories of the Saracens in the eighth century, ough Italy, Spain, and France. By the Saracens the disease was municated to the Crusaders, and the latter caused its rapid spread ughout Europe. "There was no smallpox in the new world re its discovery by Columbus in 1492. In 1517 the disease was orted into St. Domingo. Three years later, in one of the Spanish expeditions from Cuba to Mexico, a negro, covered with the pustules of smallpox, was landed on the Mexican coast. From him the disease spread with such desolation, that within a very short time, according to Robertson, three millions and a half of people were destroyed in that kingdom alone. Smallpox was introduced into Iceland in 1707, when 16,000 persons were carried off by its ravages, more than a fourth part of the whole population of the island. It reached Greenland still later, appearing there for the first time in 1738, and spreading so fatally as almost to depopulate the country.[1]

Smallpox occurs at all periods of life, from the fœtus in the womb to the most advanced old age. It is developed equally in the two sexes, in all seasons and in all climates. It may appear as a sporadic affection, or epidemically. In the latter form its invasion is most frequently observed in the summer or the autumn season.

The cause of smallpox is a specific animal poison;[2] the period when transmission is most likely to happen being the suppurative stage, and when developed epidemically, it is propagated in the direction of prevailing winds. As a general rule, smallpox attacks but once in a lifetime, but against this rule many exceptions have been recorded. Instances have been observed, in which the disease has invaded a second, a third, and even so often as a sixth time. Sometimes the subsequent attack is as severe as the first, but usually the recurrent affections are remarkable for mildness and rapidity of course.

The protective agency of an attack of variola against subsequent invasions of the disease was known at a very early period in medical history; thus, inoculation was practised in Constantinople in 1673, and the practice was subsequently introduced by Lady Montague into England, whence it extended to the Continent of Europe. The intention of inoculation is to produce an attack of the disorder, at a period when the physical powers are sound and capable of resisting its influence; moreover, it is found that the inoculated disease is always more mild than the sporadic affection. Several serious objections, however, raise themselves against inoculation, and one of these so great as to have been deemed worthy of a restrictive Act of the Legislature. The most obvious reasons that oppose themselves are, firstly, that the system is equally, perhaps more safely protected by the milder operation of vaccination; and, secondly, that inoculation often produces a severe and dangerous disease. But the most important objection to the continuance of the practice is, that the smallpox engendered by inoculation may be communicated to others by contagion; and, consequently, that one such case may become the source of a fatal and devastating epidemic. An instance of this kind is related in the memoirs of Maria-Theresa of Austria, who, having inoculated a number of children, the smallpox was communicated by the latter to an entire village.

---

[1] Sir Thomas Watson's Lectures, first edition, vol. ii. p. 657.

[2] Several authors have imagined the cutaneous eruption of smallpox to depend upon the presence of minute animalcules; but careful observation affords no ground for this supposition.

PROGNOSIS.—In the discrete form of variola, or when the eruption is slight, and its course mild, the prognosis is favorable, the disease usually terminating in from two to three weeks. In the confluent form there is considerable danger, and the disorder requires to be watched with care, for symptoms of a fatal nature are apt to show themselves suddenly and unexpectedly, and the disease is prolonged to three or four weeks.

Marson treats of the prognostics of smallpox under eight heads, namely, as governed by quantity of eruption, age of patient, concurrent inflammation of the mucous membranes especially the larynx and air passages, hemorrhagic dyscrasis giving rise to the malignant and petechial forms of the disease, adynamic state of the nervous system conjoined with irregular habits of living, vaccination, pregnancy, and general conditions of favorable or unfavorable import. In 2654 cases of every kind, he found the death rate to be 37 per cent.; namely, in the discrete form, four per cent.; semi-confluent, eight per cent.; and confluent, fifty per cent. Of those unprotected by vaccination, death occurs in one of every three.

Variola discreta "is hardly ever attended with danger to life, except in children who may be cutting teeth at the time, and may have convulsions or some affection of the brain." In variola semi-confluens the patients "usually do well," fatal cases being the consequence of the combination of dentition with cerebral irritation already alluded to, or some other kind of complication, such as erysipelas, gangrene, or a petechial or malignant dyscrasia. In variola confluens the danger proceeds from excessive pustulation, and especially the multiplication of pustules on the head and face; while other unfavorable indications are, flatness, want of circumscription, and a central blackness of the pustule, asthenic and pemphigoid vesication, a too purple tint of areola, absence of areola with general congestion of the skin, white and paste-like appearance of the pustules on the face, and much inflammation of the mucous membrane of the mouth, tongue, fauces, nares, larynx, trachea, and bronchial tubes. Variola corymbosa is a "very fatal form of the disease," the death average being over forty per cent.; happily, however, it is rare, Marson having seen only 104 cases in thirty years, 29 in unvaccinated, and the remainder in vaccinated persons. The danger proceeds chiefly from a tedious convalescence and a proneness to dangerous complication. Variola maligna, accompanied with prostration of nervous power, asthenia, and hæmorrhagic dyscrasia, is sometimes fatal before the appearance of the eruption, and in the confluent form commonly on the fifth day. In these cases the contents of the pustule are blackened by the presence of blood (variolæ nigræ), and hemorrhages take place from the mucous membrane, sometimes from the conjunctiva and ears, and sometimes from the nose, mouth, air passages, bowels, kidneys and uterus; in case of pregnancy, the fœtus is expelled dead. Petechial variola falls into he same category, and is also of unfavorable prognosis; the petechiæ ing the most frequently met with in the axillæ and groins. The nomalous forms of variola are also unfavorable in proportion to the agnitude of the irregularity or complication.

The age the most favorable for smallpox ranges between ten fifteen years; the rate of mortality in infants under five years be fifty per cent.; and that of adults above thirty and elderly pers over fifty per cent.

Congestion of the mucous membrane of the air passages, early distinguished by hoarseness of voice, may run on to inflammation of lungs. The hemorrhagic dyscrasis, constituting the malignant petechial forms of variola, is also a grave complication; so also giving way of the power of the nervous system, as indicated by delirium, irritability, tremulousness, restlessness, and sleeplessn Delirium on the tenth day is a bad sign, and the result gener fatal: grinding the teeth, in children, is also bad; but the presenc a quiet, tranquil, cheerful and hopeful temper is of good augury, w apprehension and anxiety are the reverse.

Smallpox is always favorably controlled by vaccination; the primary fever may sometimes be severe, but it subsides completel soon as the exanthem is developed.

Pregnancy is always a serious complication of smallpox; in cases abortion takes place the day before death, the fœtus being d sometimes, however, the child is born alive, and both parent and offspring survive.

The general unfavorable conditions mentioned by Marson are: occurrence of smallpox on ship-board; in small, confined, and ventilated tenements; in hospitals, and especially in lying-in pitals; in plethoric persons, and such as have lived an irregular in drunkards, and those who are kept in too heated an atmosph and make use of exciting and stimulating food during the progres the fever. In hospital, the space allotted to each patient should be less than 2000 cubic feet.

Marson also notes that smallpox "is particularly destructive to coloured races; the blacks who come to the Smallpox Hosp suffer more from the disease than the native inhabitants of Gi Britain." And Dr. Bulkeley "mentions an instance in which a t American Indians took smallpox, and they all died of it; ev vestige of the tribe was swept away."

TREATMENT.—The uncomplicated form of smallpox requires [illegible] simple plan of treatment, namely, confinement to bed in an ap ment which is well ventilated, spare of furniture, curtains, and carp darkened and quiet, light bed coverings, diluents, cooling regin and an equable temperature, frequent change of linen, and an at tion to symptoms as they arise. Meddling in variola is calculate be as dangerous as in other eruptive diseases depending for their ori on a specific poison; and it must be borne in mind, that any vasc determination to the surface, whether internal or external, will followed by an increase in the number of pustules developed on irritated spot. Thus an incautious purgative at the outset of the fe may induce a congestion of the mucous membrane of the aliment canal that may terminate seriously.

The treatment of variola in its simple form is consequently expectant; very little is required [illegible] actitioner during the fe of invasion beyond the maintenance of a cooling regimen, keeping the bowels gently open by saline purgatives, and sponging the skin with tepid water. The diet should consist of milk, bread and milk, barley-water, gruel, arrowroot, sago, tea; with cooling fruits, such as grapes, oranges, strawberries, roasted apple alone or pulped with milk, as suggested by Sydenham; and refrigerant drinks, for example, toast and water, lemonade, orangeade, apple water, tamarind water, water sweetened with currant jelly or acidulated with raspberry vinegar, imperial, and water or barley-water, containing chlorate of potash (ʒj ad ℥xvj).

At the commencement of the secondary fever, the proper remedies are, febrifuge salines, such as the citrate of potash, or liquor ammoniæ acetatis, or effervescent salines; and at a more advanced period, a continuance of gentle laxatives or enemata to regulate the bowels, and opiates to relieve restlessness, sleeplessness, and nervous symptoms. The diet may be improved by the addition of beef tea, chicken and veal tea, mutton broth; and, if the powers of the system flag, wine may be administered and repeated according to its effect.

The carbonate of ammonia treatment, so valuable in rubeola and scarlatina, is equally applicable to variola, for ammonia is, probably, as Dr. Charles Witt observes: "The only medicine yet known which appears to have any decided effect upon this terrible malady;"[1] that is, as a specific remedy. The manner of administration of the ammonia should be the same as that laid down under the head of treatment of scarlatina; and the general precautions taken, and the management of the patient, should be the same. Our own experience of the carbonate of ammonia fully corroborates the value of Dr. Witt's suggestion; and we feel that the adoption of this method of treatment cannot be too forcibly pressed on the attention of medical men. If it be capable of effecting only one-half of what its advocates claim in its favor, it must, of a necessity, rank among the most valuable of our remedial appliances.

The indication for the use of aperients is a coated state of the tongue and a torpid condition of the bowels, and the remedies employed may conform to the ordinary usage of the practitioner: sulphate of magnesia with infusion of senna; infusion of rhubarb with sulphate of soda; calomel; gray powder; or castor oil; or if the intention be to maintain power in combination with aperient action we may unite sulphate of quinine with sulphate of magnesia. When the tongue is clean no aperient may be found necessary, excepting in instances of decided constipation. The opposite condition of bowels namely, diarrhœa, is rare; but where it exists, it may be necessary to have recourse to opiates with antacids and astringents; to injections of starch and laudanum; to sulphuric acid with the infusion of roses; to hydrargyrum cum cretâ with aromatic confection; and to a linseed meal poultice applied over the abdomen.

---

[1] Dr. Charles Witt mentions a paper read at the Epidemiological Society of London from the pen of Mr. H. C. Miles of the Royal Artillery, Halifax, on the subject of a remedy for smallpox used by the Indian tribes in that portion of Canada. This remedy is an infusion of the Saracenia purpurea, a variety of the pitcher plant. A wine-glassful of the infusion throws out the eruption; and the same dose repeated once or twice, after an interval of four or six hours, puts an end to it completely During the prevalence of an epidemic a wine-glassful is taken daily as a prophylactic. Various trials of this remedy in this country have, however, failed to establish its reputed beneficial effects.

If the cerebro-spinal system be much disturbed, leeches to the mucous membrane of the nose or behind the ears, with mustard foot-baths, are indicated; gargles for inflammation and dryness of the mucous membrane of the mouth and fauces; a mustard cataplasm to the epigastrium for pains in that region with violent vomiting; mineral acids with infusion of roses, for hemorrhages; and emollient applications to the eyelids where the conjunctivæ are painful and swollen. If the eruption be tardy in its appearance, the patient may be immersed in a warm bath, at the same time that tartarized antimony and sudorifics are administered internally. Opiates are contra-indicated in the primary fever, on account of the extreme excitability of the nervous system; in the secondary fever they are frequently useful. Sydenham recommended a small bleeding at the commencement of the secondary fever, and following it up with an opiate; but he cautions us against abstracting much blood. The safer practice is not to bleed; and in this opinion the profession is generally agreed.

These are the remedies which are applicable to smallpox in its ordinary and uncomplicated form, but when the disease assumes any of the unfavorable characters which have been described, other measures are indicated, especially counter-irritation. Local bleeding by leeches or cupping might be employed at any period of the disease when the symptoms indicate serious congestion of viscera; the abstraction of blood must, however, be conducted with caution, lest too great debility follow its use. Counter-irritation is applicable when the removal of blood by bleeding would be admissible. Under the same circumstances, again, mild purgatives may be administered, when symptoms of gastro-intestinal irritation are absent. But purgatives, it must be recollected, are calculated to excite and keep up irritation of the mucous membrane, and they may frequently be very judiciously superseded by emollient injections. At the close of the eruption the employment of gentle laxatives is indicated, and, if much debility be present, tonics should be had recourse to, and their action aided by wine and nutritious diet. When there is pain and heat of head, with delirium, which depletion from the mucous membrane of the nose and behind the ears has been unsuccessful in removing, ice may be applied to the head, or the cold water pillows recommended by the late Professor Davis for hydrocephalus, or, still better, the cold cushions of Dr. James Arnott.[1]

For the pleuritis which sometimes attacks smallpox patients, accompanied with severe local pain and short and difficult respiration, the treatment is a blister or mustard sinapism with an opiate. Pneumonia and bronchitis are also best relieved by similar local means, with the addition of salines and sedatives; and the irritable cough of bronchitis is much soothed by the inhalation of the vapor of hot water, to which a few drops of chloric ether or creasote have been added.

[1] See *Lancet*, vol. ii. 1841–2, page 441.

Erysipelas is to be treated in the same manner as when of idiopathic origin; and gangrene by the use of wine, tonics, and, locally, the application of the chloride of lime and dredging with pulvis cinchonæ. In ulcer of the conjunctiva, or ulcer of the cornea, it may be necessary, after cleansing the eyelids with a decoction of poppies, to touch the ulceration with a point of nitrate of silver; and in inflammation of the vulva, with muco-purulent discharge, the poppy-head decoction is especially valuable, followed by a lotion of liquor plumbi and laudanum or one of tannin.

When the nervous system is especially affected, as in that variety termed by Gregory nervous variola, the administration of tonics, such as bark and quinine with sulphuric acid, is called for; and similar means must be adopted when there is evidence of a cachectic state of constitution, as in the occurrence of petechiæ, passive hemorrhages, &c. Whatever the treatment adopted, however, these cases are too frequently fatal.

Cold affusion has, at various times, been extolled by eminent practitioners, but the plan has been only sparingly adopted. Some have recommended that it should be conducted in the manner laid down for scarlatina, while others confine themselves to sponging the surface of the body, or the face alone. Cold water does not appear to have the effect of causing retrocession of the pustules, but is thought to increase the congestion of the mucous membranes. Dr. Marris Wilson has pursued the practice of sponging the surface for several years, and he assures us with the best success.

The belladonna treatment recommended for scarlatina is also applicable to smallpox. We have seen this remedy exhibited with benefit, both as a prophylactic and a curative measure.

Vaccination has been observed to possess the power of modifying variola, even when an attack of the latter has commenced. Some remarkable cases are on record in which the good effect of this remedy was apparent; and it recommends itself by its extreme simplicity. Eichhorn, who was the projector of the plan, inserted the vaccine lymph by forty or fifty incisions immediately that the symptoms of smallpox had become apparent.

As regards *local* treatment, various plans have been adopted and recommended for the purpose of bringing the pustules to a favorable issue, and preventing the deep ulcerations, with their consequent cicatrices, which are apt to ensue when the eruption is left to itself. We will now proceed to consider these plans, but, before doing so, it may be necessary to premise that every precaution should be taken to prevent the rupture and laceration of the pustules by the nails of the patient, in efforts made to relieve the itching by which the desiccating process is accompanied. The face should be frequently and well bathed with an infusion of poppies, or mallow, with weak barley water, or a weak solution of common salt, particularly the region of the eyes, nose, and lips. The secretions from the parts should be emoved as much as possible by means of a sponge wetted with these uids, and whenever an excoriation is formed, it should be anointed ith a liniment composed of equal parts of olive oil and lime-water, or dusted with starch powder. But a better means of relieving the heat and dryness of the skin, and that state which conduces to itching, is by anointing the surface plentifully with the benzoated ointment of oxide of zinc. This should be applied pretty thickly, and repeated as often as it dries up or becomes thin from wiping or rubbing. The ointment will not interfere with the escape of secretions or with the removal of such secretions when effused on the surface; but will tend very considerably to the comfort of the patient by keeping the inflamed skin soft and moist. Some fragments of tissue paper pressed gently on the ointment will further contribute to the protection of the skin. Sometimes also dredging with starch will be found serviceable.

The importance of keeping the surface moist, and excluding the atmosphere, would seem to have suggested to Hebra, the eminent Dermatologist of Vienna, the application of an apparatus for maintaining a permanent warm bath. A butcher's apprentice, eighteen years of age, seized with confluent variola, was placed in the bath on the fifth day of invasion, the third of eruption; and retained there until the seventeenth day, when the crusts had fallen. Hebra expresses his satisfaction with the result, although, during his confinement in the bath, the patient was attacked with pleuro-pneumonia dextra, nevertheless, as far as the variola was concerned, the fever remained moderate, and the eruption passed favorably through its course. We should be sorry to prejudge this method of treatment; but we are disposed to regard it less favorably than the treatment by the carbonate of ammonia, with the local application of some material capable of forming a coating to the skin, of excluding the air and possibly the light, and at the same time of maintaining a permanent state of moisture by retaining the evaporated fluids of the cutaneous surface.

Great benefit is derived from pursuing the practice of the Arabian physicians, namely, opening the matured pustules, gently pressing from them their contents, and removing the latter by means of a sponge moistened with plain water, or with an infusion of poppies. This plan accelerates very materially the healing of the ulcerations, and prevents the formation of deep and disfiguring cicatrices.

Various ectrotic methods of arresting the development of the eruption of variola, and consequently, of preventing the occurrence of cicatrices, have, from time to time, been suggested and employed. Nitrate of silver has been used for the purpose by Serres, Bretonneau, and Velpeau. If the apex of each conical vesicle be removed, and the pointed extremity of a stick of nitrate of silver inserted into the opened vesicle, its further progress will be instantly arrested. But this proceeding is necessarily attended with pain, and requires time for its performance. To obviate these objections, it has been proposed to paint the entire surface with a solution of nitrate of silver, containing fifteen or twenty grains to the ounce; this application to a surface of any extent has been found to be dangerous, in consequence of giving rise to a considerable increase of the febrile symptoms, while the anticipated effect of checking the progress of the eruption has only partly succeeded. Moreover, the solution forms a mask to the part upon which it is applied, beneath which the pustules advance unseen nd unaltered. The nitrate of silver as an ectrotic remedy is only vailable, therefore, for the eruption situated upon the face and neck, nd to this it must be used quite at the outbreak of the disease, namely, on the first or second day, otherwise it will be liable to failure. In summing briefly the objections to the employment of nitrate of silver, they may be stated as follows: firstly, it creates pain; secondly, it requires more time for its application than the practitioner can devote; and thirdly, it augments the febrility and nervous exhaustion of the patient.

Another ectrotic remedy has been warmly eulogized by Dr. Midivaine,[1] of Ghent. It consists in the application of sulphur ointment, by means of light friction, to the entire surface of the skin. This ointment should be composed of two drachms of sulphur to an ounce of lard, and used three times a day, at as early a stage as possible of the disease. The effects of the remedy, according to Dr. Midivaine, are, contraction and hardening of the papulæ, diminution of tumefaction of the skin, and subsidence of the gastro-intestinal irritation. The appetite of the patients quickly returns, and they are speedily restored to health.

A more important ectrotic remedy than either of the preceding is one which was made the subject of an essay,[2] read before the Parisian Medical Society, by their President, Sir Joseph Oliffe. This remedy is mercury, applied to the external surface of the body, and is one which is deserving our attentive consideration. Mercury administered internally has long been known to possess remarkable powers in modifying the influence of variola upon the system, but it was left to modern times to prove that this agent has also the property of neutralizing the variolous virus when applied externally. We pass over the well-known and unmeaning experiment of Von Wenzel, namely, the trituration of the variolous matter with calomel, and the subsequent marvel that the virus should have lost its inoculating power, to the more rational experiments of Serres, afterwards so successfully pursued by Briquet. The mercury was employed by these gentlemen in the form of a plaster, the emplastrum vigo cum mercurio, of which the formula in the French Pharmacopœia is as follows:—

℞.—Mercury, ...	95 parts.
Balsam of storax, ...	48
Common plaster, ...	312
Wax, resin, turpentine, ana, ...	16
Gum ammoniac, bdellium, olibanum, and myrrh, ana,	5
Saffron, ...	3
Spirit of lavender, ...	2—M.

In the first experiment, a strip of this plaster was placed on the arm of a patient attacked with variola, while a similar strip of diachylon plaster was applied to the opposite arm. Under the mercurial plaster the development of the eruption was arrested; under the other plaster no modification took place. In a second case, the face of the patient was "covered with the plaster, a part of which he tore off during the night which followed its application. The denuded surface was the seat of suppurating pustules, whilst on that portion of the visage which continued subjacent to the plaster, their abortion was effected." In a third case, a man affected with "violent confluent variola, the pimples were small, scarcely raised above the level of the epidermis, and surrounded with a brilliant red areola. The vigo plaster was applied, and allowed to remain seven days; on its removal, it was found that no suppuration had been established, with the exception of four pustules, and these were situated near the mouth, and had not been in contact with the plaster. This patient was radically and rapidly cured, and no scars were manifested."

---

[1] Bulletin de la Soc. Méd. de Gand, 1840.

[2] Lancet, vol. i. 1840–41, p. 694.

The mode of application of the mercurial ectrotic is thus stated by Sir Joseph Oliffe: "The whole face should be covered with a mask of the vigo plaster, merely leaving a space for the mouth, nostrils, and eyes. A little mercurial ointment is applied to the eyelids." "The plaster is allowed to remain for three days in simple smallpox, and for four in confluent." In the event of any objection to the plaster arising, mercurial ointment may be substituted with a fair prospect of benefit. We recently suggested this plan of treatment to a young practitioner who had several cases of smallpox under his care; he reported that within half an hour of applying the unguentum hydrargyri fortius to the skin, the troublesome itching was entirely stopped, and the pustules ceased to grow. Serres entertained the belief that the mercurial treatment would effect the miscarriage of the eruption, at whatever period it was used; but Briquet has shown that the eruption remains unmodified, if it have reached its pustular stage. The proper period for the application of the remedy is the second day, or, at the latest, the third day of the eruption. Its effect is to produce immediate resolution of the eruption, or to arrest it at the papular or vesicular stage; the eruption never becomes purulent, nor the skin between the pustules inflamed and swollen. But, however powerless as a perfect ectrotic the mercurial application may be when used in the pustular stage, it would seem, from the evidence of Sir Joseph Oliffe, that the local inflammation is much modified and ameliorated. According to Briquet, "the mercury acts as an antiphlogistic, or resolutive, in destroying or suppressing the local inflammatory process; or it exercises a specific action on the cause, whatever it be, which produces the variolous pustule." From his researches on other inflammations of the skin, the latter of these propositions would appear the most correct.

It is interesting to learn, that, in the progress of his experiments, Briquet ascertained that mercury possessed precisely the same influence over vaccinia as over variola, an additional fact in evidence of the identity of these diseases.

The mercurial ectrotic treatment has been adopted with success by Dr. Hughes Bennett, in Edinburgh. He employed an ointment consisting of the unguentum hydrargyri fortius, an ounce mixed with one drachm of starch powder. The ointment was applied pretty thickly over the face night and morning, with the result of preventing itching and swelling of the skin, the deep red stains which smallpox commonly leaves behind it, and the formation of pits. In the instance of two sisters, in whom we employed similar means, all irritation and discomfort of the skin were prevented; but symptoms of salivation showed themselves in the course of a few days, the mouth was tender, and the salivary glands enlarged and painful. If the same beneficial result could be obtained without the mercury, the discovery would be of much importance.

We have not heard of any injurious effects following the use of the mercurial ectrotic, but Piorry has recommended in its stead the application of blisters. The advantages of his method he conceives to be the avoidance of any risk of salivation, and of the danger of repercussion. The blister, he remarks, is derivative in its action, and not repellent; but he, at the same time, admits the possibility of ischuria as a consequence of its use.

We cannot admit for a moment the doctrine of repercussion, or the theory upon which it is based, in connection with the arrest of the serious effects of smallpox upon the face; the only part of Piorry's objection which merits attention is the chance of exciting salivation, which is known to be an occasional normal accompaniment of the variolous fever. If this fear should sway the mind of any of our readers, and if salivation, on the one hand, and ischuria on the other, should seem to them to prohibit the use of both remedies, there is another against which neither objection holds; although we believe it to be inferior in power to the mercurial ectrotic; namely, the tincture of iodine. Dr. Crawford of Montreal first called attention to the remedy, in 1844, and gave a favorable report of its success; and his report has been corroborated by the subsequent practice of other medical men in British America and the United States. Its good effects are, the alleviation of inflammation, pain, swelling, and itching, the arrest of development of the pustules, the prevention of the red stains which follow the eruption, and the considerable reduction in extent of the pitting of the skin. In this latter respect the tincture of iodine is inferior to the mercurial ectrotic. It should be pencilled on the eruption at as early a stage as possible, and repeated once or twice daily for several days. Piringer, however, recommends that, on the first day of the eruption the whole face, including the eyelids, should be painted ten times, with intervals of half an hour; if the patient be seen for the first time, on the second day, twelve applications will be required; while, on the third day, fourteen to sixteen will be necessary.

The impermeability, tenuity, transparency, and simplicity of application of collodion, have given it a place among the substances which, acting upon the property of excluding air, have been employed as ectrotic remedies. It possesses the advantages of extreme cleanliness, and of enabling the operator to see what is passing beneath, without requiring to disturb it. Another of its properties, namely, its contractility, must also be considered as an agent in its beneficial effect, since by means of the peculiar pressure which it exerts upon the skin, it will disperse the congestion of that tissue. Being incapable of producing ptyalism, it is free from any objection of that kind. It has been made the subject of experiment in France, and favorably reported on by Dr. Aran, of the hospital Bon Secours.[1] The application recommended by Dr. Graves, a few years since, of a solution of gutta percha in chloroform, did no good; and by confining the discharge, produced a most offensive condition of the patient.[2]

The ethereal solution of mastich and iodine[3] of Dr. Thomas Smith Rowe, of Margate, would, with less iodine, probably be found to be an improvement on the tincture of iodine or collodion, and to combine the properties of both.

An impression existed among the ancient physicians, that the light of the apartment in which smallpox patients are kept should be either modified or excluded. In pursuance of this view, and at the suggestion of John of Gaddesden, the rooms were hung with scarlet cloth, and the windows carefully blocked up. So recently as 1832, Dr. Picton,[4] of New Orleans, asserts, that in his practice no instance of pitting after smallpox occurred when the light was shut out. Serres placed a glass capsule over a smallpox pustule, and observed the effects produced by excluding the air and light. He found that, in proportion to the exclusion of both was the development of the pustule checked, and that when they were completely shut out, the pustule became shrivelled and quickly dried up. Moreover, Serres remarks that he never reaped such successful results, in the cure of smallpox, as he did at La Pitié, during one year that the patients were placed in a kind of cellar, which was very dark and ill ventilated. The same principle has been more recently acted on by Legrand, who proposed to the Academy of Medicine, in 1839, the plan of covering the surface of the body with gold leaf. After the experiments of Fourcault (page 62), this practice would appear somewhat hazardous.

VARICELLA.

Syn. *Chicken-pox; glass-pox; water-pox; chrystalli; varicella bullosa*, Cross; *pemphigus variolodes vesiculosus*, Frank; *variolæ pusillæ*, Heberden; *variolæ crystallinæ, volaticæ*, Morton; *variolæ lymphaticæ*, Sauvages; *varicella vesicularis, lenticularis*.

VARICELLA[5] is an eruption of isolated vesicles more or less numerously dispersed upon the skin; and accompanied with a slight degree of febrile disorder of the constitution. The fever precedes the eruption by a few hours, sometimes an entire day, and is greatest at night. The eruption is successive, appearing every morning for four or five days, and drying up into thin friable scabs, which desquamate in two or three days without leaving any trace of their previous existence, making the full period of duration of the disease about a week. It is especially an eruption of children; takes its origin in contagion, and, like other zymotic affections, is not liable to recurrence.

---

[1] Bulletin de Thérapeutique, vol. xxxix. p. 369.

[2] Marson, *loco citato*.

[3] *Vide* Formulary of selected remedies.

[4] American Journal of Medical Science.

[5] According to Gregory, the term varicella was first employed by Vogel in 1764; it was named chrystalli and variolæ chrystallinæ by Ingrassias in 1553; and is mentioned by Riverius in 1646, under its popular designation among the Italians of *verolette*. The first use of the term chickenpox is attributed to Morton in 1694; and Heberden, in 1767, has the credit of distinguishing it from variola under the title of *variolæ pusillæ*.

The chief interest of varicella resides in its relation to the other zymotic affections, and especially to variola; to the near approach which it makes to certain of the forms of modified variola, and to the consequent necessity of distinguishing between it and that disease. Like the zymotic affections in general, it has its period of incubation, its fever of invasion, its eruption, and its decline; and like variola, its eruption consists of a papule and vesicle; but unlike variola, the vesicle is unilocular; it subsides at the serous stage; it leaves no pit or cicatrix at its fall; and it is incapable of exciting a secondary or suppurative fever.

The period of *incubation*, as determined by the interval between exposure to contagion and invasion ranges between four days and seventeen days, and may be generally stated at a week or a fortnight, during which time no symptoms are present indicating a failure of health.

The period of *invasion* is limited to a few hours, probably to a single night, rarely reaching twenty-four. Its symptoms are those of fever of a mild description, for example, lassitude, headache, sometimes sickness, sometimes cough; with heat of skin and increased quickness of pulse.

The *eruption* commonly makes its appearance in the morning; and consists of semi-globular vesicles, remarkable for the thinness of their epidermis and transparency, dispersed over every part of the skin more or less numerously. There may be a hundred or more of these vesicles, and every morning an equal number for four or five days. In size they have been compared to a small kind of pea or vetch, the chick-pea; hence the term *chicken-pox*. They have no redness around the base, and look like drops of water sprinkled on the skin; hence their early name *crystalli*, and the popular expressions *glass-pox* and *water-pox*.

On closer examination it will be found that the vesicle is preceded by a small red spot surrounding the aperture of a follicle; the centre of the spot soon becomes swollen, constituting a papule; and in less than twelve hours the red spot and the papule are both submerged by the vesicle. These primary stages of the vesicle correspond with similar stages of variola; but it is clear that varicella is more superficial than variola; the papule of varicella is less raised, its ruddy base is not hard to the touch, nor is the papule granular and gritty as in variola. The vesicle also is different both in figure and structure; it is globular in varicella, and depressed in the centre or umbilicated in variola; it is a mere blister with a single cavity in varicella, but multilocular in variola. Even the contents, though equally transparent, are different in the two forms of vesicle; for in varicella the lymph is serous and watery, while in variola it is plastic and viscous.

The vesicle of varicella of a day old, so remarkable for its crystal-like transparency, is opalescent or lactescent on the second and third day, and sometimes assumes the yellowish tinge of pus; on the third day a slight areola is formed around the vesicle; and on the third, the fourth, or the fifth day it darkens in the centre of its dome from desiccation and is soon converted into a thin, lightish-brown, granular and friable scab. Two days later, from the fifth to the seventh day of eruption, the scab falls off, leaving a smooth and slightly-reddened surface, uniform with the rest of the skin; not unfrequently the vesicle is broken, when it reaches its full dimensions, and then a thin scab is formed by the desiccation of its base.

The development and course of the eruption, and sometimes its outbreak, is accompanied with some degree of itching; and it is important that the patient should be prevented from scratching, for irritation of the vesicle may induce inflammation and suppuration, and a pit like that of variola might be left behind. The pressure of the body against the bed-clothes and the movements in bed sometimes produce a similar result.

The constitutional symptoms accompanying varicella are usually very slight; there is some peevishness, sometimes moderate fever at night, but none in the day; the pulse is scarcely affected; the tongue is clean, and appetite undisturbed; but there is commonly some degree of catarrh, generally mild; and a little debility follows convalescence.

DIAGNOSIS.—The pathognomonic characters of varicella are its transparent semi-globular vesicles, appearing in successive crops; the general distribution of the vesicles; the invasion of the eruption with fever; the limited duration of the disease; its occurrence in children; and the absence of other signs of cutaneous disorder. And the eruptions with which it is liable to be confounded are miliaria, herpes, and modified variola. The vesicles of miliaria very closely resemble those of varicella; but in every other respect the disease differs completely, namely, as to successive crops, limitation of course, general distribution, and specific fever. The miliary eruption is an accidental accompaniment of fevers attended with much heat of skin, or clinical states associated with sweating, for example, the early stages of the eruptive fevers, continued fever, acute rheumatism, and childbed. In miliaria the skin is reddened and moist from heat; the vesicles are met with only on parts of the body, as on the sides of the trunk, the loins, armpits, and inner side of the thighs, or they may be limited by the extent of some heating article of dress, such as a woollen vest; they are not dispersed universally over the body and limbs as are the vesicles of varicella; and although, generally, somewhat smaller than the latter, they present considerable variety of size, and are sometimes clustered; moreover, they occur more frequently in the adult than in children, and especially in acute rheumatism and in parturient women.

The vesicles of herpes are generally of a somewhat larger size than those of varicella; clustered; partial in their distribution; developed on a hard, thickened, and inflamed base; often accompanied by a hot, tingling, and pricking itching, and unattended with special constitutional symptoms. It is only on their first eruption that any difficulty of diagnosis could arise, the subsequent changes in the vesicles being totally different; those of varicella tending to desiccation and the for-nation of a thin crust in three or four days; while the vesicles of herpes take three or four days to attain maturity. Moreover, varicella is an affection of the vascular surface of the corium, while the morbid changes in herpes sink deeply into the corium, and terminate often in suppuration and sometimes in gangrene and sloughing.

The diagnosis between varicella and the vesicular forms of modified variola, for with these alone can it be confounded, are the greater degree and longer duration of the fever of invasion of the latter; the hard and gritty papule; the hardened base, and the slow development of the vesicle; the special characteristics of varicella being the short duration of the primary fever, the softness and trifling prominence of its papule and the suddenness of development of the vesicle, which attains its full size within a day. If the modified variola be present in its papular or pustular form; if its vesicle be conical, umbilicated, or multilocular, then the distinction is so obvious as scarcely to involve the possibility of a doubt. Lastly, the fall of the crust of modified variola is commonly followed by a pit which is altogether absent in varicella.

CAUSE.—The cause of varicella is a specific contagion; it is contagious and epidemic, but not communicable by inoculation of the fluid of the vesicle, and is uninfluenced by vaccination. The belief in the inoculability of varicella probably owes its origin to an error of diagnosis, the lymph having been obtained from a case of vesicular varioloid. Varicella is rare in the adult, but common in childhood; from a table of cases occurring in the Children's Hospital, and quoted by Dr. Gee,[1] it would appear that of 727 cases the greatest number (628) occurred between the ages of six months and six years; 177 under one year; 137 between one year and two; 100 between three years and four; and 96 between four years and five; under three months the cases were only 23; and between nine and twelve years, 22.

PROGNOSIS.—Varicella is a very harmless affection; it is never dangerous, and has never been known to be fatal.

TREATMENT.—The simplest antiphlogistic treatment, in respect of tranquillity, diet, and medicine, is all that is necessary. Our remedies may be expectant, and if any debility appear at the termination of the eruption, we may have recourse to bitters with nitromuriatic acid, quinine, or chalybeates, such as the syrup of the phosphate of iron. The indications for local treatment are, pruritus and abrasion of the corium; the former may be best relieved by sponging with a tepid solution of carbolic acid (♏xl ad ℥xvj), or by dusting the surface with calamine powder; fuller's earth powder; oxide of zinc with starch; or starch powder alone. These powders are also the best application where any abrasion or excoriation has occurred. The benzoated ointment of oxide of zinc with or without spirit of wine is also a valuable agent for producing a coating over the excoriated surface, and protecting it from exposure to the air or further irritation.

---

[1] Article Varicella, in Reynold's System of Medicine.

VACCINIA.

Syn. *Variola vaccina; variolæ vaccinæ; cow-pox; cow smallpox.*

VARIOLA VACCINA, the smallpox of cattle, is a contagious inflammation of the skin, prevalent among cattle, and occasionally communicated to man. It is characterized by the development, upon an inflamed base, of multilocular and umbilicated vesicles, which pass by degrees into the pustular form, and terminate in hard, dark-brown scabs, the latter leaving behind them deep and permanent cicatrices. Variola vaccina is accompanied with constitutional symptoms, which are mild during the first stages of the vesicle, but become more severe, and constitute a secondary fever, when the local inflammation arrives at its height, and the suppurative process is about to be established.

The existence of a disease identical with smallpox among the inferior animals, is a theorem that might, *à priori*, be predicted. It is perfectly consistent with our knowledge of the physiological laws and comparative structure of man and animals. It is a position well established with regard to some other diseases, and there can be no doubt that still further analogies in relation to pathology will be unveiled by future research in that most interesting department of medical science. The announcement of the discovery of a disease analogous to smallpox in the cow, in the horse, or in any other animal, at the present day, would occasion little surprise; it is admitted, indeed, as a principle, in the first rudiments of our physiological education; but when this declaration was made in 1796 by the immortal Jenner, it was a bold soar of genius, and too enlightened for the philosophy of his age. It is now, however, well established, that smallpox has for centuries been prevalent among animals in all parts of the world; that it has made its invasion as an epizootic, and, for the most part, in connection with a similar pestilence among men. Jenner was acquainted with the fact of the occurrence of a disease in the horse, which was communicable to the cow, and capable of engendering in the latter animal an eruption that could not be distinguished from the true vaccinia. This disorder in the horse was, unquestionably, the equine smallpox; it was, however, from the circumstance of its development in a situation where, from the thinness of the skin, eruptive disease in a mild form would most naturally occur, namely, in the heels, confounded with a more common disease of that region, the *grease*. By a wrong inference drawn from this observation, an inference perfectly natural and perfectly excusable in the state of science at that period, an inference which its distinguished author subsequently relinquished, namely, that the variolæ vaccinæ had their origin in the horse, Jenner created an argument which, for many years, was industriously employed as an objection to the philosophy of his views; with how little injury to the splendor of his discovery, we who live can tell.

In the excellent report[1] of the Vaccination Section of the Provincial Medical Association, the committee remark that the ravages of this epizootic are not confined to one region of the earth; that such as it has been seen in the valleys of England, it has likewise been observed upon the mountains of the Andes, on the elevated ranges of the Himalayas, in the plains of Lombardy, in the green pastures of Holland, and on the sunny slopes of Asia. It is interesting, moreover, to learn that in Bengal the natives apply to this disease the self-same appellation that they give to the smallpox in the human subject, namely, *bussunt*, *mhata*, or *gotee*. It would be so much out of place, in a work dedicated to practical purposes, to go into the numerous inquiries and arguments that have been raised upon the question of the history and analogies of cow-pox, that we shall content ourselves with stating the facts which we conceive to be established relative to this disease, and the principal observations by which those facts are supported. The facts to which we allude are:—

---

[1] Transactions of the Provincial Medical Association, vol. viii. 1840, p. 1.

1. The prevalence, at the same period, of the cow-pox among cattle, and the smallpox among men.

2. The transmission by *contagion* of the smallpox to cattle, and the consequent development of cow-pox in those animals.

3. The transmission by *inoculation* of the smallpox to cattle, and the consequent development of cow-pox in those animals.

4. The transmission by *contagion* of the cow-pox to man, and the consequent development of a pustule similar in character to the vaccine pock of the cow.

5. The transmission by *inoculation* of the cow-pox to man, and the consequent development of a pustule similar in character to the vaccine pock of the cow.

6. The transmission by *inoculation* of the cow-pox to man, and the consequent development of an eruption similar to, if not identical with, smallpox.

The first of these theorems appeals to history for its proof, and is additionally substantiated by the facts which tend to support the second proposition. Its accuracy has been verified also by several practitioners during the recent epidemic of smallpox in England. Gibson,[1] in a sketch of the province of Guzerat, states that variola carries off annually many persons, and "the same disorder is at times very fatal among the cattle." Macpherson, writing from Murshidabad in 1836, observes, that the disease among the cows has not occurred in that province for two years; that during the same interval very few cases of variola have been known, and from these circumstances he infers "that the unknown causes which favor the disease in the human subject have the same tendency in the cattle; in fact, that variola, and mhata or gotee, owe their origin to the same cause." Mr. Lamb, stationed at Dacca, remarks, in 1836, that during the prevalence of variola, the cow-pox "appeared in one muhalla, and carried off fifteen or twenty cows."

The transmission by contagion of the smallpox to cattle, which rests upon the assertion of numerous observers, is strikingly illustrated by Ceeley[2] in the following narrative: "On Friday, the twenty-second of October, 1840, my friend Mr. Knight informed me by letter, that he had on that day seen on the hand of a patient, Mr. Pollard, aged fifty-six, who had never had smallpox or vaccine, two broken vaccine vesicles, which the patient said he had caught while milking his own cows, some of which he knew were affected with the same disease, and were then very difficult to milk." Mr. Pollard at the same time expressed his conviction "that his cows had been infected from human smallpox effluvia, to which he considered they had been exposed." It appears that the smallpox had been prevalent in the village of Oakley, and the last three persons attacked were two women and a child. "The two cottages in which these three patients resided during their illness were situated on each side of, and closely connected with, a long narrow meadow, or close, comprising scarcely two acres. The first-named patient, though thickly covered with pustules, was not confined to her bed after the full development of the eruption, but frequently crossed the meadow to visit the other patients, the woman and child, the former being in great danger with the confluent and malignant form of the disease. She died on Monday, the seventh of September, and, according to custom, was buried the same evening. The intercourse between the cottages across the close was, of course, continued after this event. On the following day the wearing apparel of the deceased, the bed-clothes, bedding, &c., of both patients, were exposed for purification on the hedges bounding the close, the chaff of the child's bed was thrown into the ditch, and the flock of the deceased woman's bed was strewed about on the grass within the close, where it was exposed and turned every night, and for several hours during the day, until the thirteenth of September, eleven days. On that day the above-mentioned eight milch cows and two sturks were turned into this meadow to graze. They entered it every morning for this purpose, and were driven from it every afternoon, to be transferred to a distant meadow to be watered and milked, where they remained through the night. Whenever the cows quitted the meadow in question in the afternoon, the infected articles above mentioned were again exposed on the hedges, and the flock of the bed spread out on the grass, and repeatedly turned, where it remained till the morning, when the cows were readmitted." It appears, however, that the removal of the infected articles was not always accomplished so punctually as had been enjoined, for both the proprietor and the milkers affirm, that on one occasion, at least, they observed the bed-flock on the grass, and the cows amidst it, and licking it up. The proprietor positively declares, and the milkers corroborate his statement, "that the animals were in perfect health on their first entering this close, but within twelve or fourteen days of that event, five of the milch cows appeared to have heat and tenderness of the teats, upon which, imbedded in the skin, were distinctly felt small hard pimples, which daily increased in magnitude and tenderness, and in a week or ten days rose into blisters, and quickly ran into brown and blackish scabs. At this period, when the teats were thus blistered and swollen, and very tender, the constitutional symptoms were first observed, viz., sudden 'sinking,' or loss of milk, dribbling of saliva from the

---

[1] Transactions of the Medical and Physical Society of Bombay, vol. i.

[2] Transactions of the Provincial Medical Association, vol. x. 1842, p. 211.

th, and frequent inflation and retraction of the cheeks, starring of
coat, 'tucking up of the limbs' and 'sticking' up of the back, and
d loss of flesh: the process of milking was now very difficult, dis-
able, and even dangerous; and on the fourteenth of October, the
dle of the third week, the detachment of the crusts and loose
cle, and the abundant discharge of pus on attempting to milk,
pelled the milkers to desist, for the purpose of washing their
ls. Soon after this period, the cows became by degrees more and
tranquil, as the tenderness and tumefaction of the teats subsided,
finally, milking was performed with comparative facility, and at
eriod of our visit, scarcely any trouble arose in the performance
e operation, though here and there a teat seemed still tender." In
emarks upon this case, Ceeley observes, "Another circumstance,
requires to be particularly noticed; it is the fact of the occur-
of the vaccine disease on a young sturk, which, of course, could
have been induced by those casualties which commonly propa-
it among milch cows, but simply by the cause which originated
lisease in the other five animals, whatever that may have been.
sturk is not considered liable to the vaccine; at least so it is in-
d in this neighborhood, because no one has ever seen the animal
ted by it."

is scarcely needful to add more evidence to that conveyed in the
ding paragraph, in proof of the communicability of the contagion
allpox from man to cattle, but we cannot forbear quoting one or
further illustrations; the first is contained in the following brief
ct from a letter addressed by Dr. Waterhouse, of Cambridge,
chusetts, to the celebrated Jenner: "At one of our periodical
lations," says the writer, "which occur in New England once in
t or nine years, several people drove their cows to an hospital
a populous village, in order that their families might have the
benefit of their milk. These cows were milked by persons in all
s of smallpox; the consequence was, the cows had an eruptive
der on the teats and udder so like the smallpox pustule, that
y one in the hospital, as well as the physician who told me,
red the cows had the smallpox." Dr. Sonderland, of Bremen,
municated the smallpox contagion to cows, by covering them
sheets between which persons fatally affected with smallpox
lain. These experiments were successful in a few cases, after
y trials.

e third proposition, namely, the transmission of smallpox to cattle
eans of inoculation, and the consequent development of cow-pox
ose animals, is also established on abundant evidence, for the
of which we are again indebted to the zealous perseverance of
Ceeley, of Aylesbury. It is stated by Dr. Macmichael, in an
read before the College of Physicians in 1828, that "vaccine
r having failed in Egypt, medical gentlemen were led to institute
n experiments by which it has been discovered that, by inocu-
the cow with smallpox from the human body, fine active vac-
virus is produced." M. Viborg, of Berlin, is reported to have

inoculated cattle, and several other classes of domestic animals, with success.

Ceeley instituted a series of experiments on the inoculation of the cow with variolous lymph in the month of February, 1839. In his first subject no effect was observed for nine days, at the end of which time, one out of seven punctures, inoculated with virus of the seventh or eighth day, presented the appearance of a tubercle. On the tenth day this tubercle had all the characters of the vaccine vesicle; by the fifteenth day the vesicle reached its acme, and was "truly splendid." Decline commenced on the sixteenth day, the crust was well formed on the seventeenth, but was rubbed off prematurely. In this experiment the vesicle was retarded five days; the usual period of maximum development of the variolo-vaccine pock being the tenth day. In a second experiment, the first inoculation failed. After re-inoculation, four out of the seven punctures looked purplish or livid on the fifth day, and were vesicular, with incipient central crusts on the sixth day. By the tenth day, they had attained their acme. On the eleventh, decline had commenced, and progressed gradually till the twenty-sixth day, when the crusts fell, leaving behind them smooth, rose-colored pits.

The fourth proposition is one so well established as to require no especial remark. The nature of the affection resulting from this contagion is considered in the section entitled "Casual variolæ vaccinæ in man." The fifth proposition is equally satisfactory in its proof; the effects of "primary lymph" from the variolæ vaccinæ will be stated at a future page.

In support of the fact announced in the sixth proposition, it has been observed, that when the epizootic disease presented characters of great severity, the symptoms produced on man by inoculation from such cases were also severe, and often serious, contrasting strongly with the mild affection engendered by the virus from the ordinary discrete form of cow-pox. Macpherson, in experiments with this virus in Bengal, in 1837, found that an eruption was developed, which was identical with smallpox. Mr. Wood, of Gowalpara, in 1839, met with similar cases of so great severity, that he was led to contemplate the substitution of inoculation with smallpox virus, as a safer expedient. At Silhet Mr. Brown removed some dark-colored scabs from a cow laboring under variolous disease, and triturating them in a mortar, he inoculated several children with the pulp. These cases exhibited nothing remarkable, excepting a somewhat greater degree of constitutional disturbance on the eighth day than usual. After two months, children inoculated from this stock were attacked on the eighth day with severe fever, "followed by an eruption, which spread over the whole body, and, in one case, proved fatal." The eruption so produced bore all the characters of true smallpox. Thus, it would appear, that, as the smallpox virus, when introduced into the system of the cow, is so modified by the vital laws which regulate the functions of the animal as to produce an eruption of cow-pox; so, on the other hand, the virus of the cow, under like circumstances, is modified by the constitutional phenomena of the human organism, and is made to assume the characters of smallpox.

VARIOLA VACCINA IN THE COW.

Variola vaccina in the cow is by no means a common affection, and when it occurs, is usually met with in milch cows, and is transmitted to other members of the herd by the hands of the milkers. Occasionally the disorder appears as an epizootic, but more frequently in the sporadic form. In rare instances it would seem that the source of this contagion has been a variolous eruption developed in the horse, and mistaken for a more common vesicular disease of that animal, the *grease*. The vaccine disorder is modified by a variety of conditions, such as the temperament of the animal, the tone of its tissues, its state of health, the thickness of its skin, and its color. A slight difference is also observed in the disease in relation to its origin in a sporadic form, or as the result of contagion communicated by the hands of milkers; the former of these varieties Ceeley terms *natural*, the latter *casual*.

Natural variola vaccina makes its invasion with heat and tenderness of the teats and the udder, unaccompanied by constitutional symptoms, the inflamed surface is uneven and pimply to the touch, and papulæ of a red color, hard, and as large as a pea, are soon developed. In three or four days from invasion the papulæ have attained the size of a horse bean; they are tender and painful, and vesicles are gradually raised upon their summit. The vesicles, increasing in size, become acuminated, ovoid, or globular, and are distended with an amber-tinted and viscid fluid. When ruptured they present depressed centres, with an elevated and indurated margin; and when the epidermis is rubbed off, the surface of the corium is of a vivid red color, with a small central slough. When uninjured, or merely ruptured, without the removal of the epidermis, the vesicles desiccate into thick, dark-brown crusts, which commence in the centre, and proceed towards the circumference, appearing at first inlaid in the marginal elevation, and subsequently extending completely over it. The surface from which the epidermis is removed becomes covered by thin, brownish scabs, which are termed *secondary*.

Casual variola vaccina appears as an eruption on the fifth or sixth day after contagion, in the form of small, tender papulæ, which are developed upon the teats and neighboring surface of the udder. By the sixth and seventh days the papulæ have attained the size of a pea; they are reddish in color, and circular or oval in form. On the summit they become gradually depressed, assume a yellowish-white and pearly hue, and have a small central dot or linear impression. On the eighth or ninth day the central concavity increases in depth, while the margin becomes more elevated, tense, and shining, more pearly or silvery in its aspect, and the central depression acquires a bluish or slaty tint. At this period the pock is more than half an inch in diameter, and is surrounded by a narrow areola of a pale rose or light damask hue. Between the tenth and eleventh day the eruption reaches its acme; the elevations are now upwards of three-fourths of an inch in diameter, the areola has increased to four or five lines in breadth, and the integument beneath is tense and indurated. The central depressions have augmented in depth, their bluish, slaty color has acquired greater intensity, and the epidermis which invests them becomes distended with an abundance of lymph, and rises into a globular or conical vesicle. Many of these vesicles are now ruptured, others remain whole, but, in either case, they shrivel and desiccate into brownish or black crusts, which are first observed in the centre, and increase towards the circumference, until they reach and overlap the marginal border of the pock. The induration and enlargement of the latter diminish, and the crusts are thrown off spontaneously between the twentieth and twenty-third day, leaving a slightly depressed and smooth cicatrix, of a pale rose or whitish color. Such is the usual course of the cow-pock, but it necessarily presents many diversities of appearance, dependent upon aggravation of symptoms, &c. Thus, instead of forming crusts in the manner described, ulcerated and sloughing surfaces are sometimes produced, which remain for weeks in an irritable state. Moreover, casual vaccine variola always presents the eruption in every stage of its progress at the same moment, the elevations with their central depressions are intermingled with incipient papulæ, and while the crusts are being perfected in some, the vesicles are yielding in others to the distension of their lymph. This succession in the rupture depends upon the diffusion of the virus by the rupture of the vesicles, either in consequence of the movements of the animal, or by the milker, and the consequent revaccination of the neighboring unaffected skin. Ceeley has observed as many as sixty pocks upon the udder and teats of a single cow.

VARIOLA VACCINA IN MAN.

Variola vaccina may be communicated to man, either accidentally or by voluntary inoculation. In the former case the contagion is received directly from the animal, usually from the cow, but sometimes, as in the case of variola equina, from the horse. It had long been observed, that persons who had suffered from this disease were preserved against the influence of smallpox, and thence originated the practice, introduced by Jenner, of transmitting the contagion artificially to man by means of inoculation.

It is a principle well established in pathological science, that the animal system, once subjected to the influence of any disease originating in specific contagion, is protected, to a greater or less extent, against subsequent incursions of that disorder. Thus we observe that the modification which the system undergoes in the reception of rubeola and scarlatina is protective of the individual against that contagion for the rest of life. The same circumstance is remarked with regard to smallpox and other contagious fevers. When this fact was contemplated by the medical philosopher, in association with the fearful ravages of that dreadful pestilence and scourge of the human race, smallpox, such as it existed in former ages, the expedient suggested itself to his mind, that if the disease could be anticipated, if the disorder, in a mild form, could be communicated to man, life would be spared, and the system equally defended against the subsequent contagion of a more virulent and fatal disease. This design, happy in thought, and happy in application, gave birth to the practice of inoculation for smallpox. Inoculation for smallpox, however, was not free from objection; the disease thus engendered was always serious, often fatal, and frequently became the source of a malignant contagion. In this state of demi-subjugation smallpox was found by Jenner, when the well-known fact of the protective influence of cow-pox first engaged his attention, and aroused in his comprehensive mind the philosphic thought that spread happiness and security where gloomy anticipations and uncertainty had previously prevailed. He had the talent to perceive in cow-pox smallpox in its mildest possible form; and he trusted that the transmission of this to man would insure the same results as inoculation with the virus of human smallpox. This trust was rewarded by the complete success which attended the prosecution of his views.

In the foregoing remarks we have endeavored to show that the advance of improvement to the Jennerian standard was progressive, and that it was created by the contemplation of the wants of the human race. Since Jenner's discovery, more than half a century[1] has glided away, half a century, moreover, replete with important and valuable discoveries, both in general and medical science. A portion of that half century has seen the attention of medical practitioners again engaged in considering the imperfections of our present means of defence against smallpox. A third era of discovery has dawned. It is seen that although, as a general rule, the principle announced in the preceding paragraph, namely, that the invasion of the contagious disease is protective against subsequent attacks of the same disease is correct, yet, that exceptions to this rule do occur so frequently as to indicate the necessity for further investigation into the nature and history of smallpox, with a view to afford additional security against its ravages. Thus it has been observed that recurrent attacks of smallpox are not unusual, and that smallpox after vaccinia very frequently occurs. Instances of the latter kind, indeed, are so often met with as to lead to the suspicion that vaccinia gradually loses its protective influence over the system.[2]

With a view to meet the supposed declining influence of vaccinia, numerous propositions have been made, and modes of practice adopted, the principal of which are, revaccination, retro-vaccination, variolo-vaccination, and an immediate return to the variolæ vaccinæ of the cow. These various modes of re-establishing the protective powers of vaccinia we shall examine in their turn, after having, in the first place, traced the history of casual vaccinia, as observed and recorded by Ceeley, and described the effects of ordinary vaccination with Jenner's lymph.

[1] Jenner's first experiment was made on the 14th of May, 1796.

[2] In a conversation which we recently had with Mr. Marson, he made the important practical observation that, after an imperfect vaccination, revaccination will often fail, while the person still remains open to the reception of the smallpox.

CASUAL VARIOLA VACCINA IN MAN.

The transmission of the cow-pock contagion to man presents all the anomalies which are known to accompany exposure to other sources of contagion. Milkers who have never been vaccinated will sometimes escape altogether, while others who have been vaccinated or variolated will take the disease; and instances not unfrequently occur in which persons who regard themselves secure, in consequence of having previously suffered from casual vaccinia, are a second time affected. In all the three latter cases, however, and especially the last, the disorder is characterized by the manifestation of a much milder type than that of the unmodified disorder. The parts of the body usually affected in milkers are the back of the hands, the flexure of the joints, sides of the fingers, and the face. When the eruption appears in the latter situation the virus is conveyed by means of the hands moistened with the lymph of the ruptured vesicles. On the back of the hands, and between the fingers, the epidermis is thinner than on the palmar surface, and consequently affords greater facility to its imbibition by the dermal tissues. For it is satisfactorily proven that abrasion of the surface is by no means necessary to the inoculation of the disease. When, however, the epidermis is abraded and the skin chapped, the effects of the virus are remarkable for severity, subcutaneous abscesses are liable to form, and the lymphatic vessels and glands frequently become inflamed.

The signs which indicate that the contagion has taken effect are the appearance of inflamed spots or papulæ, which are hard to the touch, acuminated, and deep seated. The papulæ are of a deep rose-red or purplish color, and are soon surmounted by an ash-colored or livid vesicle, which assumes the umbilicated character as it increases in size, and then becomes yellowish in the centre. At this period the areola makes its appearance, lymph is effused beneath the umbilicated epidermis, and a vesicle of variable size, and of a bluish or slate-colored aspect, is developed. The local inflammation is sometimes so severe as to produce sloughing of the derma and serious constitutional disturbance.

In illustration of this affection, Ceeley records the following interesting case:—[1]

"Joseph Brooks, aged seventeen, a fine, healthy, intelligent young man, who had not been the subject previously of variola or of the vaccine, stated that he commenced milking on Friday the ninth of October, and that his milking was confined to four cows, only one of which had the disease, from four to six vesicles on each teat. He milked these four cows occasionally, and continued to do so till the eighteenth of the same month (ten days), having milked them in that period six times. On this day (the eighteenth) he felt the cervical absorbent glands and lymphatics stiff and tender, and on the twentieth found a pimple on the temporo-frontal region, which he could not resist scratching. On the day before that he observed on his finger a red pimple, of the size of a pin's head; on the next day one on the thumb, very small. In neither situation was he aware of the pre-existence of any visible wound or abrasion of the cuticle. On the twenty-first he had headache, general uneasiness, and pains in back and limbs, with tenderness and pain in the course of the corresponding lymphatic vessels and absorbent glands, particularly of the axilla, which increased till the twenty-third, when nausea and vomiting took place. His right eyelids became swollen, and were closed on that day, but after this period he became better, in all respects, never having been confined to the house, although disabled from work. The vesicle on the temporal region had a well-marked central depression with a slight crust, a general glistening appearance, and was of a bright rose or flesh-color, with a receding areola, and there was an inflamed, tumid, and completely closed state of the corresponding eyelids.

---

[1] Transactions of the Provincial Medical Association, vol. x. p. 216.

"On the finger the vesicle was small and flat, with a slightly depressed centre, containing a minute crust. It had a beautiful pearly hue, and was seated on a bright, rose-colored, slightly elevated base. On the thumb the vesicle was also flat and broad, but visibly depressed towards the centre, where there appeared a transverse linear-shaped crust, corresponding doubtless with a fissure in the fold of the cuticle. The vesicle was of a dirty, yellowish hue, and visibly raised on an inflamed, circumscribed base; lymph was obtained from a vesicle on the temple, in small quantity, by carefully removing the central crust, and patiently waiting its slow exudation. In this, as in most other respects, it strikingly resembled the vesicle on the cow, and appeared as solid and compact. The lymph was perfectly limpid, and very adhesive. No lymph was taken from the vesicles on the finger and thumb, with a view to avoid any interruption of their natural course.

"On the twenty-sixth and twenty-seventh, when the redness and elevation of the base of the vesicles had materially diminished, the vesicles themselves had become greatly enlarged. On the thumb and finger they were loosely spread out at the circumference, each having a dark and deep central slough. On the temple, the margin of the vesicle, as on the cow, was firm and fleshy, its diameter being nearly ten lines, and its centre filled with a dark brown firmly adherent slough. In about seven or eight days, by the aid of poultices, the sloughs separated, and the deep ulcers healed, leaving cicatrices, like variola, deep, puckered, and uneven, which were seen on the twenty-fifth of November."

INOCULATED VARIOLA VACCINA.

The inoculation of variola vaccina, or, as it is popularly termed, *vaccination*,* consists in the transference of a small portion of the contents of the vaccine vesicle, the vaccine lymph or virus, to the papillary surface, or to the vascular tissues of the derma of a sound person. This object is effected by means of an oblique puncture; by several oblique punctures; by numerous superficial punctures, as in tattooing; by numerous superficial punctures, accompanied with a sudden lift of the point of the instrument so as to rip up the cuticle; by several parallel scratches, vertical or horizontal; or by numerous small scratches, either parallel or crossed.[1] The punctures should be effected with a clean sharp lancet freshly dipped in the vaccine lymph; the punctures and scratches may be made either with the lancet or with a needle, in both instances also charged at the point with lymph; or the small parallel scratches and cross scratches may be made by a small rake or scarificator invented expressly for the purpose. In whatever way the operation be performed, the endeavor should be kept in view to introduce the lymph as thoroughly as possible into the wounds. Another and rarely practised mode of vaccinating is to make a small incision, and place within it a thread saturated with the lymph. And in persons who have resisted the contagion, it has been recommended to use a small blister. The blister is produced by retaining upon the arm a piece of adhesive plaster, in the centre of which has been placed a fragment of emplastrum lyttæ, not larger than the head of a small pin. When the blister is formed, the lymph is to be deposited on the exposed surface of the derma. Mr. Crosse found this proceeding very successful in the case of a strong child, who resisted the operation in the usual way; and it is worth bearing in mind in cases where the ordinary operation has more than once failed.[2]

The proper subjects for vaccination are infants, and as the purpose of vaccination is to protect them from smallpox, the operation should be performed early; earlier in cities and towns, where the dangers of smallpox are greatest, than in country districts; and especially early during the prevalence of a variolous epidemic. And we are led to this practice by the knowledge of the fact, "that one-fourth of the deaths from smallpox in England occur in children under the age of one year."[3] Another very important consideration is the health of the child: if the child be weakly or ailing, or if it be suffering under some existing disease, the operation must be deferred. Dr. Seaton remarks, that the contra-indicating influences of vaccination are acute disease, diarrhœa, or any chronic affection, such as a disease of the skin, for example, eczema, and especially that local form of eczema to which infants are so commonly liable, namely, intertrigo. A healthy infant should be vaccinated between the fourth and sixth week; a delicate child between the second and third month; "but all except those whose state of health positively contra-indicates vaccination, should be vaccinated by the age of three months. This early period of life is also particularly suitable for vaccination, as being usually free from the disturbing influence of teething." And under every circumstance tending to delay operation, the process should never be postponed beyond the sixth or seventh month.[4]

---

[1] [illegible] "Vaccination," by Dr. Edward Cator Seaton, in Reynold's System of Medicine, [illegible].

[2] Lancet, vol. ii. 1830, p. 642.

[3] "[illegible] deaths from smallpox which occurred in England in the six years [illegible], [illegible] were children under one year of age."

[4] [illegible] of vaccination, ranging between one month and three months, is [illegible] to our adoption on a principle of policy; but we know more

But although from its intention vaccination must be practised in infancy, the operation may also be performed at every period of life. Thus children at any age who are found unprotected may be vaccinated or revaccinated; and in case of the presence of smallpox in a house or in a family, every member of the family should undergo the operation as a mutual protection. At the smallpox hospital the nurses are vaccinated when they commence their duties, as are also servants and laborers employed about the house; and, as a consequence of this precaution, no instance of smallpox has taken place in a nurse for a great number of years. During an epidemic of smallpox it is as necessary to vaccinate adults as children; and there are special circumstances that render it advisable that persons should be vaccinated at puberty and at manhood.

Vaccinators have their different methods of operation; and it is well that each should adhere to that process which yields him the greatest amount of success. Good vaccinators, says Dr. Seaton, expect "to raise a vesicle for every point of insertion." Marson remarks that, "with good lymph and the observance of all proper precautions, an experienced vaccinator should not fail of success in his attempts to vaccinate above once in one hundred and fifty times." And Seaton observes further, that "at several large stations where vaccination is well performed, and where accurate records are kept, I found the average of failures to infect at the first operation did not exceed one in one hundred and seventy cases." Dr. Seaton considers the best mode of vaccinating to be that by puncture; the lancet should be held at an angle of 45 degrees, and directed obliquely from above downwards, and pressed onwards until it enters the derma; the puncture produced in this manner is valvular; and the lymph inserted into it has no tendency to escape, but, on the contrary, is disposed to gravitate into its deepest recess. There is no fear, he says, of the expulsion of the lymph by hemorrhage; and when an ivory point is used, he directs that the finger should be pressed against the valvular flap as the point is withdrawn. Five such punctures, half an inch apart, must be made on the arm, or three on each arm. "It is a very good plan," he observes, "to make each puncture a double one," by which means "a finer and larger, often oval, compound vesicle is raised." But the same author remarks, that in less adroit hands the plan by puncture is not so successful as that of the cross scratch, the latter presenting the largest amount of abraded surface for absorption of the lymph. When the cross scratched surface is large, it will be sufficient to make two such patches on each arm; but when the patches are small, not exceeding the length of the punctures, there should be as many as of the latter. The larger patches should be placed three-quarters of an inch asunder; the smaller ones, half an inch. The small tattoo punctures, and the ripped or torn punctures, should be disposed in a similar manner to the scratches, in small plots; the number of plots being the same, so as to afford a similar

---

than one, of whose judgment we entertain a high respect, who believe that a later period, namely, after the ninth month, is more efficient as a protection against smallpox.

long scratches are used, they
inch apart, and be three or four
the lymph is introduced into
lancet, or by the ivory point;
punctures and scratches, the lymph
with the flat surface of the lancet,
wounds, or insinuated into them
In the superficially punctured and
produced are frequently confluent and
while on the long scratches there are
one oblong vesicle of considerable
punctures of the dimensions of a six-
many as eighteen or twenty vesicles.
operation is to bring the vaccine
and extensive contact with the vascular
with the least possible chance of dis-
punctured or scratched surfaces bleed
the application of the lymph, the
before the lymph is plastered on the abra-

vaccination should be performed with fresh
the vesicle: but where this advantage is
have recourse to lymph preserved by
or between plates of glass, or to lymph
tubes hermetically sealed. In distant
lymph cannot be procured, and where,
climate, lymph dried on points or between
to injury, it is sometimes necessary to
vaccine crust. The crust is triturated with
to that of fresh lymph, and in this state
moderate success. Lymph begins to be formed
day after vaccination, and is ready for use
the period the best suited for taking the
of the perfection of the vesicle and the
is the eighth day, the day week of vacci-
called *eighth day lymph*. The lymph is pro-
by piercing the dome of the vesicle with
then awaiting its gradual exudation. The
many-chambered cavity, and unless all the cham-
whole of the lymph cannot escape; that is the
several punctures, and the punctures should be
almost horizontally, so as to slice off the upper
A double advantage is gained by this proceed-
greater probability of the escape of the whole of the
from the liability of its admixture with blood.
has exuded from its loculi, the tip of a clean and
be moistened with the lymph, and the lancet charged
is to be employed for making the punctures and
conveying a proper quantity of the lymph to the
abrasions. It is of course desirable that every portion

of the abraded derma should be moistened with the lymph. A good vesicle, says Dr. Seaton, of such a size as is produced by a single deep puncture, will produce enough lymph to vaccinate from four to six children, or to charge thoroughly six or eight ivory points. Where direct vaccination cannot be effected, the charged points must be moistened with water preparatory to being used; and when glasses are employed, a small drop of water should be placed on the dried film of lymph, the object being to bring the lymph as nearly as possible to the degree of fluidity which it possesses in its fresh state. To be too dry or too moist would be equally objectionable.

Lymph as it issues from the loculi of its vesicle is perfectly transparent, somewhat viscous, and wholly free from any tinge of blood. The vaccinator must assure himself that the lymph has the proper appearance and aspect, and must be ready to use the most careful judgment, both in the selection of the child from whom the lymph is taken, and of the most perfectly developed vesicle. The child should be healthy; "babies are much better lymph-givers than elder children or adults, and children of dark complexion, not too florid, with a thick, smooth, clear skin, yield the finest and most effective lymph."[1] The lymph also must not be serous and watery, neither should it be opaque and purulent, but should possess the transparent, viscous character already mentioned.

The most convenient spot for vaccination, and that usually selected for the purpose, is the rounded prominence of the shoulder over the middle of the deltoid muscle, and about an inch below the point of the acromion process. The operator grasps the arm with his left hand so as to make the skin tense, and with his right, armed with a sharp and clean lancet tipped with lymph, he makes the oblique and valvular punctures, or the smaller punctures with and without ripping, or the long or short scratches, as may best consort with his usual and therefore most successful mode of practice, that practice of which, as we have stated, the failures should not number more than one in every one hundred and fifty vaccinations, and which for every puncture should produce a vesicle. The number of punctures is another very important consideration; there should be five on one arm half an inch apart, or three on each arm; for it is necessary, as shown by Marson, that not less than four good and perfect cicatrices should be left on the arm as evidence of the success of the operation and of the consequent safety of the child. And when other plans than that by puncture are chosen, the abraded spots should be equivalent in number. Again, after the operation, any exuded blood may be allowed to dry upon the wounds, and the part upon which the operation has been performed must be carefully protected against pressure or friction. Indeed this latter precaution is necessary to be enforced throughout the whole course of the subsequent phenomena, and until the crust has formed and has fallen spontaneously.

For two days after the operation no change is perceivable in the appearance of the punctures; the seed is in the soil, and has not yet commenced to push forth the future plant. On the third day there is a small red papule at the seat of the puncture. On the fifth day the vesicle is formed, the cuticle of the papule is gently lifted up by the effusion beneath it of the vaccine lymph. The vesicle has a bluish white tint, is rounded at the border, and slightly indented or umbilicated in the centre. The eighth day is the day of perfection of the vesicle: it is round, pearl colored, plump, swollen at the border, and umbilicated in the centre. While a slight redness around its base, the incipient areola, gives warrant for Jenner's expressive definition of its appearance at this period, namely, "the pearl upon the rose." This is the time of the mature fruit, for now the lymph is in its best state for removal and propagation.

---

[1] Dr. Seaton, *loco citato*.

The development of the areola, which begins on the eighth day, constitutes a new phase in the phenomena of the vaccine vesicle. The areola assumes importance during the ninth and tenth days, reaching a breadth of one to three inches, and on the eleventh begins to fade, declining more and more during the succeeding days until it altogether disappears. The areola presents a vivid red color, sometimes bright, and sometimes roseate, and represents a true inflammation of the skin. The integument is hot, painful, itchy, swollen, hard, and infiltrated; and with these local symptoms there is more or less constitutional disturbance or feverishness; the child is restless and fractious; its stomach and bowels may be deranged; the skin is hot; and there is frequently enlargement of the axillary glands. These symptoms correspond with the secondary fever of variola, and are due to the same cause, namely, the maturation of the vesicle, and the transmission of the vaccine virus into the blood and throughout the system. As long as the pathological process is simply local, it proceeds onwards by successive steps in a state of calm, without any excitement of the organism; and this is the period at which we obtain the lymph for the purpose of vaccination. But the constitutional feverishness which is set up coincidently with maturation of the vesicle explains why the lymph obtained at the latter period may be a source of evil rather than of good, and may be the means of arousing unhealthy action in the recipient, while it must necessarily fail in producing the normal results of successful vaccination.

Vaccination, therefore, presents us with a regular succession of phenomena; an incubation of two days, a papulation of two days, a vesiculation of four days bringing us to the eighth day, then a crescent areolation of two days followed by dispersion of the redness, and a maturation and desiccation of the vesicle extending from the ninth to the fourteenth or fifteenth day. Desiccation begins in the umbilicated centre of the vesicle and gradually spreads to its border; the lymph becomes opaque and purulent; and the crust, which is at first brown, becomes deeper colored until it is almost black; it hardens and shrinks and falls off between the twentieth and twenty-fifth day, leaving behind it a deep circular pit sharply defined at its circumference and marked on its floor by minor pits or foveolæ corresponding to the cells of the vesicle. The floor of the pit is often a little depressed in the centre, and sometimes from this centre there issue a number of radiating lines. This is the foveolated cicatrix of vaccination, a mark which endures for life; the stamp of succes of the operation; and in the absence of which the individual is unvaccinated, and therefore unprotected.[1]

But the current of vaccination does not always run its course as smoothly as is here described; the vaccine vesicle may be *retarded* or *accelerated* in development; or the areolar inflammation may be attended with the production of a roseolous rash, a lichenous or vesiculous eruption, erythema, enlarged and painful axillary glands, erysipelas, ulceration, and sloughing. "The most simple and frequently seen form of retardation is a mere delay for a day or two in the course of the vesicle; by the eighth day it has not more size or development than ordinarily is met with on the sixth, and the areola does not form till the tenth day, or even later. Sometimes the delay is much longer; at the end of a week from the vaccination, when the child is brought for inspection, so little of result is seen that it is a question whether the vaccination have not altogether failed; some fresh lymph is inserted on another spot; and as the vesicle of the new vaccination rises, that of the first vaccination is seen also to develop itself, and the two run their course at the same time. Lymph may thus lie dormant, as it were, without any apparent reason, it has been said, for even three weeks. I have not myself, however, seen a case of such duration. But sometimes there is an obvious reason for the retardation, as when vaccine lymph has unwittingly been inserted in a child who happened to be incubating measles or scarlatina. When these appear, the vaccine vesicles, if any have been induced, will be arrested in their course, and no areola will be formed till the measles or scarlatina have subsided. Retarded cow-pox is much more frequently seen when vaccination is performed with dry lymph than when it is done direct from the arm." However, "mere retardation of phenomena, if these phenomena be regular in their character, does not in any way interfere with the protective value of vaccination. When vaccination has been performed with effect on a child who is incubating smallpox, the vaccine vesicles proceed in the ordinary way till the smallpox manifests itself, and even after this, may undergo some further local development, the vaccinia and variola apparently going on together; but, unless before the smallpox appeared, the vaccination had already reached the stage of areola, its progress to that stage will be arrested, and it will have no effect in modifying the smallpox.[2]

In respect of acceleration, of course, Dr. Seaton observes, that "*accelerated cow-pox* is to be regarded with much more suspicion than retarded cow-pox, because spurious vaccination has generally an accelerated course. There may be, however, simple acceleration, a course some twelve or twenty-four hours in advance of the usual course; the vesicle on the eighth day being in the state in which it is usually seen on the ninth; the areola, nevertheless, being regular, and the crust being subsequently duly formed. In such case the value of the vaccination is not impaired."

---

[1] According to Marson, "a good vaccine cicatrix may be described as distinct, foveated, dotted, or indented, in some instances radiated, and having a well, or tolerably well, defined edge; an indifferent cicatrix as indistinct, smooth, without indentation, and with an irregular and ill-defined edge."

[2] Dr. Seaton, *loco citato.*

Sometimes vaccination "runs an entirely irregular course, the varieties of irregularity being very considerable." In *irregular* and *spurious cow-pox,* the pathological process is imperfect and hurried, the papular stage is accompanied with irritation and itching; the vesicle is acuminated or conical; its contents being straw-colored or opaque; the areola reaches its acme on the fifth or sixth day, is faded on the eighth day; the scab is small, and decrustation is complete on the tenth day. Sometimes, nothing remains on the eighth day but a small thin scab in the act of desquamation; and, sometimes, the vesicles burst before the eighth day, and are succeeded by an irregular, suppurating, and incrusted ulceration. The irregular character of the vaccine phenomena Dr. Seaton believes to be due either to an injudicious selection of vesicle, or to an unhealthy condition of the child; in the latter case, not unfrequently associated with intertrigo or eczema.

Irregularity is also the type of revaccination; the vaccine vesicle may fail altogether, or it may be normal; it is more apt to fail in the child than in the adult; and in the adult a more perfect vesicle is met with than in the child; nevertheless, a perfectly developed vesicle in a child bearing the proper cicatrix of vaccination is occasionally observed. After revaccination in the adult, the papule or vesicle is formed earlier than usual; the areola is hard and variable in size, and the vesicle reaches its acme on the fifth or sixth day, to be succeeded on the eighth day by a scab. There is often a considerable amount of diffused local inflammation, and the constitutional symptoms are frequently severe. Severe constitutional symptoms are more common in revaccination than in primary vaccination; and are sometimes accompanied with ulceration and sloughing, and sometimes with phlegmonous inflammation, followed by pyæmia and death.

Besides the general phenomena of vaccination heretofore described, the areolar, or constitutional period of the process, is sometimes accompanied with local or general erythema, roseola, or with an eruption of papulæ or vesicles. Sometimes the vesicles are limited by the boundary of the diffused areola, at other times they are produced like an independent eruption upon any part of the body. Occasionally they are small, and sometimes so large as to challenge comparison with the bullæ of pemphigus. Ceeley observes, that he has seen a pemphigoid eruption frequently in vaccinated children, and occasionally on the cow and dog; and he regards it as a special vaccine eruption. The following are examples of the secondary eruption of vaccinia:—

GREEN, a child eighteen months old, was vaccinated at the London Smallpox Hospital, on Monday, June 7, 1841. On the ninth or tenth day after the operation an eruption of red spots was perceived upon the forehead, which quickly extended to the face, neck, trunk, and arms, and by the thirteenth day was dispersed over the whole of these regions, the redness being augmented towards evening and during the night. On the sixteenth day we first saw the patient, the vaccine crust and areola were natural, the eruption had subsided on the face, and was now principally confined to the arms, chest, and back, the legs being nearly free. In these situations it existed in its successive stages; there were small red spots, the earliest form of the affection, and larger patches, of a roundish or irregular figure, of about the size of a fourpenny piece, several of these latter patches being congregated here and there, so as to form clusters of considerable size. The margins of the patches were of a dull-red color, and somewhat elevated, while the centres presented a yellowish tinge, and in some situations were covered with numerous small vesicles, containing a limpid and transparent serum. On the eighteenth day the redness of the patches was declining, their raised border had become lighter in tint than the centre, and the epidermis was desquamating over their surface, particularly on those patches where vesicles had existed. On the face the vesicles terminated in thin, brownish, and spongy laminæ. We inoculated a healthy child with lymph taken from these vesicles, but without any result.

In the early part of the year 1846, we had an opportunity, through the courtesy of Dr. John Hall Davis, of seeing an infant in whom the secondary eruption of vaccinia was so severe as to be the cause of death. The eruption commenced upon the head and face, and thence extended to the neck and chest. On the latter there were more than one hundred vesicles, presenting the characteristic flattened and umbilicated form of the vaccine pock. They were for the most part discrete, but every here and there were confluent clusters of three, four, and five. On the neck the vesicles were confluent, the slight and irregular intervals of skin between the large patches were vividly red, and the whole surface poured out an abundant ichorous discharge. The child had evinced a tendency to eczema from its birth; a circumstance deserving the attention of the medical practitioner.

The following case occurs in the "Archives de Médecine" for September, 1841. An infant a week old was vaccinated July 3d; on the 10th several papulæ appeared on various parts of the body. On the 15th there were eleven umbilicated vesicles on the abdomen and legs similar to those of vaccinia. Three children inoculated with lymph from this eruption had vesicles developed identical with those of ordinary vaccinia.

Dr. George Gregory communicated to the Royal Medical and Chirurgical Society the case of a child in whom petechiæ appeared upon the skin four days after vaccination. The child was to all appearance in perfect health. The areola was occupied on the eighth day by an extensive ecchymosis, and the body was covered with petechial spots. By the sixteenth day, the petechiæ had commenced to fade. Five children of the same family were vaccinated at the same time, and with the same lymph, and went regularly through the disease. Dr. Gregory regarded this case as one of petechial cow-pox, in which the influence of the vaccine virus in the production of an hæmorrhagic state of the system was demonstrated. Petechial cow-pox is rare: Dr.

Gregory had never before seen a similar case, and had only heard of two of the same kind.

PROTECTIVE POWER OF VACCINATION.

We now come to a question of the utmost importance, namely, the efficacy of vaccination as a protection against smallpox. But before we engage in this discussion, it may be necessary to define precisely the meaning which we attach to the term vaccination. Vaccination we conceive to mean,

1. That the lymph employed in the operation is pure.
2. That it has been obtained from a vesicle which has passed regularly through the course described in the preceding section.
3. That it has been procured from the vaccine vesicle, between the sixth and eighth day of its course.
4. That the vesicle produced by this lymph in the vaccinated subject shall have passed regularly through the stages known as the natural course of the vaccine pock, and described in the preceding section.
5. That at least one of the vesicles produced by vaccination shall have been permitted to remain unbroken and uninjured, until the natural vaccine crust shall have been formed, and shall have fallen in the natural course.
6. That the cicatrix shall be well marked, and permanent; perhaps, also, foveolated.

When the whole of these conditions are complete, vaccination is perfect, and the person so vaccinated may be regarded as protected against smallpox. But if any of these conditions be incomplete, it would be monstrous to expect that the full influence of the vaccine protection could be exerted. Again, it has been observed, that the nearer the approach of the conditions to the standard above established, the more protective will be the influence effected by the operation, and vice versâ.

The purity of the vaccine lymph is a point of the first consequence. The genuine lymph appears to undergo no change or loss of power by indefinite transmission, provided always that due attention have been directed to the fact of its being always obtained at the requisite period, and from a vesicle which has passed regularly through its course, in fact, from the true "pearl upon the rose." But as the attention necessary for the assurance of this condition has, unfortunately, in many cases, been omitted, much spurious lymph has been mingled with that derived from the original source, and, as a consequence, smallpox after vaccination has become more frequent, and vaccination has fallen into disrepute. It would, however, be unjust and unphilosophical, to attribute this apparent falling off in the influence of the vaccine lymph to any but its true cause, the one just mentioned.

On this topic we are much gratified by a recent conversation with Mr. Marson, the resident surgeon and vaccinator of the London Smallpox Hospital. He informed us that when, in 1835, he became attached to the hospital, he found in use a lymph which had been employed

ere for nearly forty years, and which had become greatly enfeebled
its powers. Two years afterwards, namely, in March, 1837, he for-
nately met, by accident, with some new lymph, of a very superior
ind to his own, and possessing more active properties. That lymph
has continued to use until the present time (1856), and without
jury to its powers, although during the intervening period he has
accinated nearly 50,000 children, and distributed lymph to nearly
,000 medical men.

The period best suited for obtaining the vaccine lymph is the eighth
ay after the operation; Jenner says between the fifth and eighth day,
hich is too indefinite.[1] If the vesicles appear incomplete on the
ighth day, the removal of lymph might be deferred for a day, but it
important to obtain it before the inflamed areola is formed. After
e areola is established, the lymph becomes altered in its character,
nd purulent, and either loses the power of exciting a pock, or pro-
uces one which is irregular in its appearance or course, and is inca-
able of conferring safety on the person vaccinated. It is true, that
ccasionally the fallen crust is sufficiently impregnated with the desic-
ated lymph to possess the power of exciting the disease, and is [illegible]
imes used as a convenient means of transporting the virus [illegible]
climates; but the crusts for this purpose must be selected [illegible]
and even then are liable to failure.

That the vaccine pock shall pass regularly through its [illegible]
most important of all the conditions requisite for the [illegible]
nation. Jenner especially pointed out the necessity of [illegible]
be perceived that its neglect might lead to the most [illegible]
That neglect has, we fear, very extensively existed, and [illegible]
distressing consequences under which we now suffer are [illegible]
it. The fulfilment of this condition is in itself the [illegible]
the purity of the lymph, of the disposition of the [illegible]
its influence, and of the completion of the subsequent [illegible]

When the vesicle passes regularly through its [illegible]
which it leaves behind is strikingly characteristic [illegible]
pended upon as a proof of successful vaccination. [illegible]
of the foveolated appearance of the cicatrix is no [illegible]
servative influence of vaccination has not been [illegible]
that a permanent cicatrix of the ordinary size be [illegible]
there is difficulty in discovering the cicatrix, [illegible]
may be unhesitatingly concluded that the pock [illegible]
necessary stages, and, consequently, that the [illegible]

---

[1] [illegible] requires the vaccinated children to be [illegible]
week of their vaccination; consequently on the [illegible]
dawn of the eighth: the lymph is therefore [illegible]
generally finds the lymph fit for removal.

[2] It may not be out of place here to remind [illegible]
being very particular with regard to the purity of [illegible]
the operation, and indeed of the necessity for [illegible]
process. We were lately called upon to give [illegible]
a case of death which had resulted from [illegible]
the same time, had narrowly escaped with [illegible]
sorbents and suppuration of glands: and [illegible]
serious consequences resulted from an [illegible]

In taking a review of vaccination, we have to consider its many and important advantages, and balance these advantages against the small number and insignificance of its counter accidents. It has been proved over and over again that the properly vaccinated are safe in the midst of variola, while the unvaccinated inevitably take the disease; and Marson has shown that the deaths from variola are thirty-seven per cent. in the unvaccinated, and less than seven in the vaccinated. What, then, are the considerations that can possibly raise an objection to this important operation? They are simply an unfounded belief in the mind of the uninformed that disease may be conveyed from the vaccinated to the person to be vaccinated through the agency of the vaccine lymph. The physician and the physiologist know this alarm to be unfounded, and such a transmission to be impossible, and for the following reasons. The child from whom the lymph is taken is healthy, and the vesicle from which the lymph is obtained is perfect in all its features. To produce a perfect vesicle is in itself an assurance of health; for neither a weakly child nor a diseased child can develop a complete vaccine vesicle. If the child be scrofulous, the vesicle will be wanting in those characters which the vaccinator would deem necessary for the purpose of vaccination. If the child be the subject of a syphilitic constitution, the vesicle will be altered in its appearance, and no longer a true vaccine vesicle. Therefore the rule of practice is simple enough, and it is imperative that only a perfect vesicle should be used for vaccination.

But there is another disease which is more commonly associated with vaccination than scrofula or syphilis, namely, eczema. Scrofula is a disease of hereditary mal-nutrition; syphilis is a blood-poison; but eczema is a disease of mal-assimilation that may be induced in a few hours by any cause capable of lowering the tone of the system, and consequently the vitality of the individual, and therefore may be produced by vaccination. If the reader will turn back to the page relating to the causes of infantile eczema, he will see how trifling a disturbance of nutrition may be the cause of eczema; a fright or a chill to the mother of the child; or a change of food of the child. Thus the attempt to bring up an infant by hand is frequently the cause of an eczema, and at a later period dentition. In the same category we may very safely place vaccination. It is not denied that vaccination is a pathological process, and is attended with some little feverishness and disturbance of function; and a child that would suffer from eczema as a consequence of an alteration of diet would be equally susceptible of eczema from the invasion of vaccinia; no more and no less. Viewed in its correct light as a disease of mal-assimilation and debility, the relation of eczema and vaccinia is simple enough, and infinitely more easy of explanation than the theory that sees in eczema a state of morbid humors communicable by inoculation. After the experience of many years of practical operation in able and efficient hands, it is clear that the liability of the transmission of disease from one person to another by true vaccination must be considered to be a thing wholly impossible.

But we exclude from this consideration vaccination from imperfect time, to render them applicable to the thousand peculiarities that occur in daily practice. Thus, in relation to the first, we have to inquire, For what length of time the susceptibility is destroyed? and in relation to the second, At what period after contagion is the restoration of the organism so far effected, that a second attack of contagious disease may take place? To both these questions the answer is, *We know not.* All that we can venture to affirm with regard to them is, that, in one person, a single attack of contagious disease appears to be protective of the individual for life; while, in another person, a second attack may occur in a short period, the precise limits of that period not being correctly established. The determination of the shortest period at which contagious disease may resume its influence over the system is a point of much importance, and one of legitimate investigation. It is in the field of numerical medicine alone that we must look for a solution of the questions which are now proposed.

The reasoning, which is here directed to contagion in general, applies with particular force to the protective influence of the contagion of smallpox. A single attack of smallpox would appear, in the majority of cases, to protect the individual for the rest of life, but, in a smaller number of instances, the variolous constitution is still active, and a second, a third, and even more attacks may be experienced. Now, that which is true with regard to variola, is equally true with regard to vaccinia; for variola and vaccinia are, in their essential nature, one and the same disease.[1] Again, it is admitted at all hands, that severity in the manifestation of the variolous disease affords no security to the system greater than that to be derived from the mildest form; and as vaccinia is variola in the mildest shape in which it can be presented to the human organism, the question of revaccination resolves itself into the propositions stated above.

If we admit that vaccination, although perfectly protective of the constitution against the recurrence of the smallpox contagion for an unknown, and probably variable space of time, ultimately loses its powers; and if, in the next place, we inquire what means present themselves of perpetuating its protective influence, the most natural and rational method that suggests itself to our mind is revaccination. Revaccination, or a repetition of vaccination, is in most instances a simple and harmless operation, and may be practised at any period of life. Very commonly, in persons previously vaccinated and bearing the proper cicatrix of successful operation it produces no results; at other times certain results are obtained which are sometimes partial, and sometimes complete; and in a few instances, serious inflammation is set up in the vaccinated part, and either extends to the neighboring lymphatic glands, or spreads in the skin or deeper tissues in the form of erysipelas and gangrene. Marson points out as among the causes predisposing to a recurrence of smallpox, "exposure for a time to great change of climate either hot or cold," hence the importance of revaccinating persons who are about leaving home for a change of climate, or have returned to England after a long residence in a distant country, such as Australia, China, and the East Indies; and the same reasoning applies to the movement of troops. Marson also points out the important fact, that the majority of those attacked with smallpox after vaccination, are from eighteen to twenty-five years old, and this age is the one the most susceptible of recurrent variola. Hence, he considers it a "wise course to pursue, to recommend all person on reaching adult age, especially if about to change their place of residence, to be examined as to their probable security against smallpox. If they have four or more good cicatrices from vaccination, they are tolerably safe; if, on the other hand, they have but one cicatrix, and that such as can hardly be seen, or no cicatrix at all, such persons had better be revaccinated as a matter of precaution. These remarks apply especially to persons on passing from one part of the world to another, more particularly if the climate be very different from the one where they have been living."

---

[1] It is proper to mention in this place that some opinions are opposed to this belief. Dr. Robert Williams observes, "Vaccinia is a disease *sui generis*;" and further on he emarks, "It is likewise by no means proved, that the smallpox and the cow-pox are dentically diseases of the same species."—Vol. ii. p. 49. Elements of Medicine.

Numerous cases have been adduced in which an attack of smallpox has followed vaccination.[1] We care not to inquire if vaccination have been perfect in those cases, for instances are not wanting in which smallpox has followed inoculation, and smallpox itself, both discrete and confluent. These facts prove nothing unfavorable to the claims of vaccination as a protective agent against smallpox; they prove

---

[1] It must not be imagined that Jenner ever contemplated an infallible remedy in vaccination; he merely expressed his belief that vaccination would be found to protect the organism in an equal, if not in a greater degree, than variola, and with a prodigious saving of suffering and danger. In respect of this expectation, Dr. Robert Williams remarks, that it "has not altogether been verified, the evidence at present accumulated showing the attack of the latter (recurrent smallpox) to be only in the ratio of a half to one per cent., while the attacks of the former (smallpox after vaccination) are not less than five per cent., or from five to ten times greater. It is enough of glory, however, to the discoverer of vaccination, and of honest pride to the profession who have adopted it, to be able to state, that by the discontinuance of the practice of inoculation, the total number of persons attacked by natural smallpox in this country, taking the most unfavorable calculations, is reduced one-half, or probably from 260,000 annually, to about 130,000 annually, while the number of deaths have been reduced in a still greater ratio, or from 60,000 to about 11,000; also, that the accidents incident to the disease, as blindness, deafness, lameness, and the endless catalogue of miseries that follow it, are also reduced almost to nothing. This result is that of England and Wales generally, and it is still capable of being very greatly reduced, for among the better protected class of persons, as the army, only one soldier has been attacked by smallpox in every 2000, annually; so that, taking the army at 100,000 men, the mortality is only four from smallpox in the whole of that large force annually. The navy appears also to experience a similar immunity, for out of a mean strength of 7958 seamen, seven only died in seven years of smallpox in the Mediterranean and Peninsular commands, while, in the West Indian and North and South American commands, none whatever. On the Continent, also, where the governments are awakened to the great truth that the health and industry of the lower orders form the surest basis of national wealth and greatness, and where vaccination is consequently made of national importance in the matter of legislation, we find that the mortality from smallpox, though greater than in our army, is infinitely less than in England and Wales generally. In Prussia, for example, according to the table given by Hoffman, on an average of a million of deaths, only 8191 were caused by smallpox, or one in 122. In England and Wales, however, out of 141,607 deaths, 5811 were occasioned by smallpox, or one in 25, nearly; thus showing that the country which gave birth to vaccination suffers six times more by smallpox than that of its wiser and more considerate neighbor."—(P. 49.)

VARIOLATION AFTER VACCINATION.

Inoculation after vaccination has been proposed as an additional security against the contagion of smallpox. To those who regard vaccinia and variola as different diseases, such a suggestion is likely to be received with approbation; but if we view these disorders in their true light, namely, as one and the same affection, inoculation after vaccination is but a repetition of revaccination, and is, consequently, incapable of bestowing any superior advantage.

RETRO-VACCINATION.

The process of retro-vaccination is attended with some difficulty, in consequence of the indisposition evinced by the assimilative powers of one group of animals to the reception of virus derived from a different order. The operation has, however, succeeded several times in the hands of Ceeley, and its results are conclusive. This gentleman observed a slight increase in the frequency of the pulse of the animal as soon as the inoculation had taken effect, and the local affection was attended with a moderate degree of inflammation. The vesicles were produced late, and good lymph was procured on the tenth day.

When children were vaccinated with this retro-vaccine lymph, the development of the pock was found to be retarded, the papular stage was not established until the sixth or seventh day, the areola was complete on the tenth or twelfth day, and declined during the two following days. The vesicles, in some instances, were smaller or less firm than usual. With these exceptions, no difference could be detected between the retro-vaccine and the ordinary current lymph, and these differences were entirely lost after three removes in the human subject. From these experiments, we think it may justly be inferred, that for the purpose of improving the vaccine lymph, retro-vaccination, or passing it again through the cow, is useless.

VARIOLO-VACCINATION.

Inoculation with the variolo-vaccine lymph is attended with the same difficulties of transmission as are common in the case of unassimilated virus. Out of twenty punctures inoculated with lymph derived from the variolo-vaccine vesicle, Ceeley obtained only six vesicles. These, when they appeared, were characterized by their early inflammation, and by tardiness and irregularity in progress and development. The secondary fever, which arose and subsided with the areola, was severe, and if the vesicle were ruptured, ulceration and sloughing were liable to ensue. The effects of this lymph are illustrated in the following successful case: "Emma Jaycock, aged fourteen, dark, swarthy complexion, thin skin, rather florid; two points of sixth-day lymph, and four of eighth-day lymph, were inserted into six punctures; on the fifth day, four of the papulæ had ash-colored summits, and seemed vesicular, two were doubtful. On the seventh day, there were five small, distinct, reddish-gray, or ash-colored vesicles, one very small. On the eighth day, the vesicles were adva of unequal size, and of irregular form. Here I was forcibly struck with the strong resemblance some of these vesicles bore to those of. the eighth day, depicted in Jenner's work, on the arm of Hannah Excell, which he thought so remarkably like the results of smallpox inoculation. My patient stated that she felt slightly indisposed on the fifth and sixth days, that the axilla was painful on the seventh day, and that she was then giddy and sick, but felt worse on this the eighth day. On the ninth day the areola commenced, and she complained only of headache. On the eleventh day it was fully developed, when all her symptoms returned in an aggravated form. On the twelfth day it declined; but the turgid vesicles having burst the flimsy cuticle, renewed inflammation and induration, with circumscribed sloughing and ulceration of the skin, ensued, and rather deep scars are now visible."

After narrating the results of several successive removes of the variolo-vaccine lymph, Ceeley remarks, "Nothing could be more satisfactory or gratifying than the progress now made, which it would be needless further to detail; I shall therefore abstain from the description of individual cases, after adducing one example from the fourteenth remove, as a type of what might be produced in similar subjects, namely, an infant fourteen months old, florid, plump, and healthy, with a fine, clear, thick, smooth skin.

"In the majority of instances, in propagating from arm to arm, distinct papulation was apparent on the second day; on the third it was not only visible but elevated and well-defined; on the fifth and sixth, vesiculation was abundantly obvious, and lymph was often taken on those days. On the seventh day vaccination was frequently performed, and points were often charged; on the eighth the vesicle commonly exhibited a bold, firm, and glistening aspect; between this period and the ninth day the areola generally commenced (but in young infants with tense and sanguine skins, it appeared early on the eighth); by the tenth day the vesicle was commonly in its greatest beauty and highest brilliancy, glistening with the lustre of silver or pearl, having the translucency and appearance of crystal, or shining with a pale blue tint, occasionally of a dull white or cream color, bold and elevated, with a narrow centre and a broad margin, or flat and broad in the centre, with an acute margin, occasionally not raised above the level of the skin; on this and the eleventh day an extended and generally vivid areola existed, with more or less tension and induration of the integuments. At this time the lymph was frequently pellucid, and often perfectly efficient. From the eleventh to the thirteenth day gradually increasing in many individuals, both children and adults, sometimes the entire vesicle, at other times only the central part, reflected a blue or slate-colored lymph, from the congested or ecchymosed subjacent adventitious structures, proportioned to the texture and degree of translucency yielded by its desiccating epidermis. On the thirteenth and fourteenth day, particularly on clear skins moderately thick, the vesicles attained a considerable size, measuring often in their longest diameter six and a half or seven lines, and acquired a light brown centre, from commencing desiccation, as surrounded with an outer margin of dull white, or pale llow, soft and flaccid, and still possessing fluid contents. this period the areola, of a dull red or damask hue, would nd decline again and again, and even to the sixteenth or th day, the period to which complete desiccation was fre- protracted. The crust commonly partook of the form of the it was often prominent and bold, varying in color from that stnut to that of a tamarind stone. It fell generally about the hird or twenty-fifth day, often later."

cicatrices were of variable depth and extent. When the remained unbroken on a thick sanguine skin, they were deep, a thin skin, shallow; they were not always proportioned in that of the vesicle, the smallest cicatrix often succeeding the esicle, but the later the crust fell, of course the deeper the which, on these occasions, was often beautifully striated. I rcely say, that where the vesicles were accidentally broken, aneously burst, much mischief ensued, deep sloughing of the Spontaneous bursting did not often occur, except in those possessing the before-mentioned and well-known obnoxious tional endermic characteristics, upon whom we must always ve lymph with some risk.

en the lymph in the first remove produced normal vesicles, soon as it had passed readily from arm to arm, the constitu- ymptoms, though mild, were most commonly well marked. ts, restlessness, fretfulness, and inappetency about the fifth or ay were very common, sometimes as late as the seventh day. w escaped feverish symptoms on the ninth and tenth days; ad vomiting and diarrhœa. From childhood up to puberty nary symptoms from the fifth to the seventh day were un- ally visible, and often complained of; fever, vomiting, delirium, rrhœa, were not unfrequently witnessed at the commencement ng the progress of the secondary symptoms. In adults, of more complaint was made, headache, chilliness, anorexia, and es thirst, on the fifth or sixth day; increased on the seventh h axillary tenderness; but on the ninth and tenth days much febrile complaint, disinclination, and even inability, to leave But in several instances, amongst young children, little or plaint was made or indicated; all the members of the same vaccinated from the same source, might be differently affected. instance, would not cease from pastime, occupation, or meals; nother, particularly if older, would be indisposed several Neither the number nor the magnitude of the vesicles seemed mine the amount of the primary disturbance. If properly ed, small vesicles often gave rise to marked constitutional ns, and the most splendid vesicles were often seen with trivial, es scarcely appreciable disturbance."

secondary symptoms are often as active with three or four six or eight vesicles; acceleration of the pulse was frequently when no other symptoms appeared. Both primary and ry symptoms very commonly showed a remitting type."

With respect to cutaneous eruptions, Ceeley observed but one in the adult, and in children nothing approaching the varioloid character. "Roseola, strophulus, lichen, were the principal eruptions."

Dr. Basile Thiele,[1] of Kasan, has succeeded several times in inoculating the udder of cows. When children were inoculated with matter taken from these pocks, the effects produced were more intense than those occasioned by the ordinary vaccine lymph. In some cases Thiele observed two febrile attacks, one between the third and fourth day, the other between the eleventh and fourteenth; and these severe consequences were not lost until the sixth remove. In one case he produced true variola, and inoculation with the matter of the variolous pocks gave him vaccinia.

RECURRENCE TO THE PRIMARY VACCINE VESICLE.

Lymph has been procured directly from the cow in several counties of England, and numerous children have been inoculated with this primary lymph; indeed, the removes from these sources have now come into almost general use. The gentlemen to whom we are principally indebted for this supply are, Estlin, of Gloucester; Fox and Sweeting, of Dorsetshire; and Ceeley, of Buckinghamshire. It has also been obtained and employed in France by Saunoy.

Whenever an attempt is made to inoculate man with the virus derived directly from the cow, or, on the other hand, to inoculate the cow with humanized vaccine lymph, or with smallpox, some difficulty is encountered. There would seem to exist an indisposition to the assimilation of virus derived from an animal of a different order; but when this lymph has once become assimilated, all difficulty is at an end. When inoculation is effected, a remarkable difference is perceived in the consequences of the two kinds of lymph; thus, in the transference of the lymph of smallpox to the cow the virus is greatly modified, and the resulting pock is chastened and mild; while, on the contrary, the lymph of the variolæ vaccinæ first introduced into the tissues of man gives rise to symptoms of greater severity than those produced by humanized lymph. How far this difference of effect may be dependent upon the different quality of the fluids of an herbivorous and a carnivorous (the human infant) or semi-carnivorous animal, we are unprepared to say. We think it not improbable that the cause might be found in this difference of character.

The effects of vaccination with primary lymph are, according to Ceeley, as follows: On the second day after vaccination there is an unusual degree of redness around the puncture; the redness declines on the two following days, and becomes concentrated in the point where the papula arises. The elevation of the papula commences on any one of the days between the sixth and the tenth. Desiccation of the vesicle is also protracted; it contains fluid until the sixteenth or eighteenth day, and the crust remains adherent until the end of the fourth or fifth week. The areola is completed from the eleventh to the sixteenth day, and is sometimes covered with small supernu-

---

[1] Bulletin de l'Acadé[illegible] Méd., Jan. 1841.

vesicles, and accompanied by a general eruption of papulæ,
or bullæ. When the vesicle is ruptured in unfavorable con-
s, irritable sloughing sores are sometimes formed, and the fall
ust is occasionally succeeded by a yellow, foul excoriation.
esicles produced by primary lymph are very variable in
ice; sometimes they are "remarkably large, and finely de-
' at other times they are smaller, and "less developed than
icles;" but they "admit of a very remarkable improvement,
mission of the lymph through a series of well-selected sub-
y this process, also, in a very short time, most of the defects
of the evils connected with the use of primary lymph may
ated, and the lymph rendered milder, and more suited to
urposes." "Children are the best, certainly, for the purpose;
should be selected as possess a thick, smooth, clear skin, and
rk complexion, and are not too florid, but still, plump, active,
hy." By a steady and judicious selection of these, and simi-
ts, in a few (even three or four) removes, the severity of the
chief becomes manifestly materially diminished, the vesicles
magnitude and beauty often greatly superior to what is
nessed, and in a short time the lymph may be transferred
ty to others, even more sanguine and robust, where, it is well
ymph, if good for anything, will produce the finest and most
sicles." "As we advance, we find the necessity of preparing
objectionable subjects, and the advantage of subjecting many
o the same preliminary treatment, which the best and most
ioculators of smallpox formerly so successfully adopted for
ients; for it is a long time before some individuals can be
ccinated with this active lymph, even though taken from the
esicle."

ence to the primary lymph from the cow appears to us to be
unobjectionable method of improving the current lymph, and
g the deterioration which has arisen from neglect of the pre-
Jenner. Lymph from this source must necessarily be pure,
se should therefore be encouraged.[1]

MENT.—Any morbid conditions arising accidentally from
on should be treated in accordance with the general princi-
edicine. Febrile symptoms may call for the employment of
gistic remedies; and the local dermatitis, when it assumes a
unusual severity, may be subdued by means of a compress
wetted in a spirituous lotion and covered with oiled silk, or
s of a piece of Alison's prepared lambskin saturated in

---

htenstein, in a paper entitled, "On the sources from which matter preser-
inst the smallpox has been derived," in Hufeland's Journal for 1841, re-
t limpid lymph taken from the pustules produced by tartarized antimony,
ated in a person who has not been vaccinated, produces vesicles which
distinguished from those of vaccinia. These vesicles appear to be equally
against smallpox with the cow-pox, and the matter may be transmitted
n to person in the same manner. The author of the paper has inoculated
culated thirty-one persons with the matter procured from this source;
persons were protected during an epidemic of smallpox, although placed
ion with patients affected with that disease. Credat Judæus, non ego!

water. If sloughing or ulceration occur, water-dressing should be continued until the inflammation is removed, and slightly astringent washes or a mild ointment applied subsequently.

EQUINIA.

Syn. *Equinia*, Elliotson; *farcinoma; farcin; morve; rotzkrankheit; maliasmus*, Fuchs; *glanders; farcy.*

EQUINIA OR GLANDERS, a disease of the horse, is communicable to man as is vaccinia in the instance of the cow, but with less happy results. Equinia in the horse is a grave disease, and its consequences in man serious and frequently fatal. It is distinguished in the horse by a profuse semi-purulent, viscous, and fetid discharges from the nares, with ulceration of Schneiderian membrane, and swelling and induration of the submaxillary glands. The mode of conveyance of the disease to man is by contact with this morbid secretion, sometimes without abrasion of the cuticle, but more commonly through an already existing wound or by puncture. In the former case the poison enters the stream of blood by absorption; in the latter, the wound becomes inflamed and painful, the inflammation assuming an erysipelatous character, the lymphatic vessels may be traced as red lines in the direction of the glands with which they communicate, and the latter are inflamed and tender.

When the poison enters the blood without local lesion, a period of latency occurs, the period of incubation, lasting from one to fourteen days, but having an average duration of three days; after which certain constitutional symptoms are developed, consisting of lassitude, weariness, extreme muscular prostration, pains in the limbs, the joints, and the head, rigors, nausea, often vomiting, sometimes diarrhœa, and frequently delirium.

When a local lesion exists, the injured part is tranquil for two or three days before inflammation begins, but at the same time with the local inflammation, phlegmona occur in the limb as well as in distant parts of the frame, and abscesses of various size and depth are produced.

The first effects of the poison, whatever its method of introduction into the system, would seem to be the development of phlegmona which are converted into abscesses, and may be deep or superficial, small or large, and sometimes very numerous. But after a few days, and after the occurrence of constitutional disorder, the abscesses become more superficial and numerous, and are associated with erysipelatous blotches, with small tubercles composed of a yellowish concrete substance, which subsequently softens into pus, and vesico-pustules containing a semi-purulent fluid, sometimes sanguinolent and purple, and sometimes pustular. The vesico-pustules or phlyctenæ are variable in size, some being small and some large, and have an irregularly-formed base.

With the successive progress of these local symptoms, namely, the phlegmona, the abscesses deep and superficial, the erysipelatous blotches, the yellow tubercles or knots in the skin, and the semi-often purplish phlyctenæ, the constitutional symptoms in severity, the prostration increases, delirium occurs, and ion is set up in the mucous membrane of the nares, the d the bronchial tubes.

nation of the larynx and bronchial tubes is accompanied ud, sonorous, dry cough, and frequently a roaring respira- seness and loss of voice, rapid breathing, dyspnœa, restless- ious countenance, and an unusual excitement of manner. tion of the mucous membrane of the nares resembles that of there is great congestion, with numerous small yellow pustules, ulcers left by the pustules, and a profuse purulent us discharge, the discharge being sometimes streaked with d sometimes extremely fetid.

flammation of the skin is very commonly associated with tous blotches, which appear on the eyelids, nose, cheeks , and are accompanied by symptoms of congestion of the netimes drowsiness, and sometimes a low muttering delirium. ate the patient falls into a state of coma, and dies on the r thirteenth day, soon after the development of the discharges nose.

ary writers describe two varieties of equinia, which they h by the names *glanders* and *farcy*; in the former, the force sease is manifested by the mucous membrane of the nares s, and by the continuous submaxillary glands; while in the lymphatic vessels and glands are chiefly and primarily and the inflammation runs on to suppuration and abscess. of the two varieties presents an acute and a chronic form; orse, glanders is most frequently chronic; while in man, ts the characters already described, namely, those of *acute*

IC GLANDERS is more rare in man than the acute form, and er make its invasion with chronic phenomena, or follow an l farcy. When it begins as chronic glanders, it is preceded ecursory constitutional symptoms already mentioned, namely, n of power, pains in the joints, cough, sore throat, and s of the nose. But when it follows farcy, these precursory s may be absent, and its first indications may be a hoarse reness of throat, obstruction and tightness in the nose, pain ht in the forehead. loss of voice, difficult respiration, and s of congestion of the lungs, or pneumonia. Accompanying ptoms are, pain in the nose, the discharge of purulent mucus with blood when the nose is blown, and sometimes a fluent discharge, denoting ulceration of the Schneiderian membrane. es also ulceration appears in the pharynx, but there is no en- t or hardness of the submaxillary glands, and no eruption in. The general symptoms of chronic glanders are, extreme n of power, articular and muscular pains, nausea, often diar- aciation, and asthenia ending in death. Sometimes chronic takes on the acute type, and sometimes the patient recovers, duration of the disease being several months.

ACUTE FARCY is identical with acute glanders, excepting only in the absence of inflammation of the Schneiderian membrane and the occasional omission of cutaneous eruption; but in place of these there exists inflammation of the lymphatic vessels and glands and subcutaneous abscesses. The presence of a cutaneous pustular eruption indicates a more serious form of the disease, and such cases are equally fatal with acute glanders; the fatal issue occurring at the end of the second or the beginning of the third week. While in cases where the cutaneous eruption is absent the chances of recovery are greater, or the disease merges into the chronic type.

CHRONIC FARCY is distinguished from the preceding by a less intensity of symptoms and slower progress of the disease, and is sometimes associated with the affection of the nares of chronic glanders. Its special characteristic is the formation of subcutaneous abscesses, which burst and give exit to a sanguinolent or semi-purulent fluid, and terminate in unhealthy and indolent ulcers. A common situation of one of these ulcers is the centre of the forehead, near the root of the nose, while others are dispersed often in considerable numbers, in the vicinity of the joints and on the limbs. The lymphatic vessels and glands are less affected than in the acute form of the disease, and their inflammation seems to be the effect rather than the cause of the abscesses.

In chronic farcy, as in other forms of equinia, there is engendered, but to a greater degree, a state of cachexia. The patient is prostrate in power, his joints and limbs are painful, he is attacked with a hoarse and sonorous cough without expectoration, he loses his voice or speaks in a whisper, the complexion of his skin is yellow and discolored, he is emaciated, and gradually succumbs to asthenia. Some patients become the subject of pyæmia, and a smaller number recover. The disease is commonly protracted to ten or twelve months, and sometimes to two or three years.

Cases of human equinia have been recorded by Travers, Elliotson, Rayer, Tardieu, and others, and one case came under our own notice many years ago. One of the cases narrated by Travers was that of a veterinary student, who had contracted the disease by puncture while making the post-mortem examination of a horse that had died of glanders. Pus taken from an abscess of this patient was used by Coleman to inoculate an ass, and the ass speedily fell a victim to glanders. Two very interesting cases of the disease are narrated by Dr. Wilks in the Guy's Hospital Reports for 1861, and reference is also made by an article by Dr. Hughes in an earlier volume of the same reports.

DIAGNOSIS.—The pathognomonic features of equinia are, after exposure to contagion, inflammation of the injured or wounded part, the inflammation assuming the characters of erysipelas; inflammation of the lymphatic vessels leading from the injury, with swelling and tenderness of their associated glands; prostration of power; pains in the joints; eruption of pustules, vesicles, and erythematous blotches; cachexia; inflammation of the air-passages and lungs, with, in the case of glanders, inflammation, muco-purulent discharge and ulceration of the mucous lining of the nares and swelling of the submaxillary glands, without affection of the lymphatic system; and, in the case of farcy, special inflammation of the lymphatic vessels and glands, with subcutaneous abscesses and without affection of the nares. Without the special knowledge of the contagion of equinia, this disease might be mistaken for constitutional syphilis, to which it bears considerable resemblance, for example, in the cachexia, the neuralgia, the kind of eruption, the congestion of fauces, and especially the ill-conditioned ulcers which follow the superficial abscesses of farcy, and which are very like rupial ulcers. We have seen a case of this kind, which, as far as its symptoms were concerned, must have been syphilis, had it not been farcy.

Cause.—The cause of equinia in the human subject is a special poison derived by contact from the equine family, and communicated in general by absorption through an open sore or by puncture.

Prognosis.—Equinia is always dangerous, and often fatal; in the acute form, whether glanders or farcy, accompanied with pustular eruption, it is generally fatal. Acute glanders, following upon a chronic form of the disease, is also very grave, as is the union of chronic glanders with farcy. Nevertheless, recovery after the acute forms of the affection sometimes takes place, but more frequently after the chronic forms.

Treatment.—Iodide of potassium and mercury, so useful in syphilis, appear to exert no beneficial influence on equinia. The indications for general treatment are obvious, to regulate the nutritive functions and support the powers of the constitution by generous diet and tonics. The specific remedies from which the greatest advantage has appeared to be derived is the combination of arsenic and strychnia. The catylitic medicines, namely, the hyposulphites, may also, we may infer, be found of advantage; and we should recommend the tincture of the perchloride of iron as used in erysipelas.

For the eruption and for the inflammatory tracks of the lymphatics, the best remedies are a solution of nitrate of silver in nitric ether, twenty grains to the ounce; or the tinctura picis cum sapone. The nostrils, when affected with muco-purulent discharge, should be injected with a solution of chloride of zinc, two to six grains to the ounce, night and morning, care being taken to prevent the solution from being swallowed; the strong solution of table salt used in malignant sore throat might also prove useful, or a solution of chlorate of soda or carbolic acid.

FRAMBŒSIA.

Syn. *Mycosis*, Alibert; *yaws*; *pian*.

Frambœsia is an eruptive disease of zymotic origin, common in Africa, and conveyed by the negroes to the West Indies and America. It has almost entirely disappeared in some of the West India Islands, for example, Barbadoes; while in others, as Bermuda, it is unknown; but in others again, as in Nevis and Jamaica, it exists very extensively. Dr. Bowerbank remarks that, when he first went to Jamaica in 1836, "there was not an estate or penn that had not its yaw-house or hospital, and which used to be well filled; but after the emancipation in 1837, these were all done away with; and, now, many practitioners who have been in practice for years have not seen a dozen cases." Within the last few years, however, the disease would appear to be on the increase; and in the census of 1861, 1512 cases are reported, namely, 894 males, and 618 females.

Framboesia sometimes begins as an eruption without premonitory symptoms, but more frequently is preceded with mild symptoms of fever, namely, weariness, lassitude, and pains in the limbs. And each successive development of eruption is accompanied with similar constitutional symptoms. But when the eruption has broken out, the constitutional symptoms disappear; and, although the disease is commonly prolonged for several months, there is no constitutional disorder of any importance; such constitutional disorder, when it exists, being referable to the irritation caused by the local disease, and the drain from the ulcers.

The eruption makes its appearance in the form of small spots, which are sometimes flat, sometimes raised in the shape of papules, and sometimes pustules; their size ranging from that of the head of a pin to half an inch, or an inch in diameter. They are developed most commonly on the face, in the axillæ, around the pudendum, and in the perineum, and appear in successive crops; some of the earlier pimples drying up, while others extend in dimensions. After a time, the papule, or spot, becomes covered by a crust formed of desiccated secretion; the crust covers a raw surface, and this surface throws up granulations; the granulations are red and fungous, moistened by a muco-purulent secretion, and suggest the idea of a raspberry; hence the synonyms of the disease, yaw and framboesia. Sometimes the effort of the system is directed to the production of these granulations in prominent masses of considerable extent. At other times ill conditioned ulcers are produced; but the ulcers are always superficial, and heal up without leaving permanent scars.[1]

Framboesia is common in children; and in them is both lighter in its attack, and of shorter duration, than in adults; in children it commonly lasts for three to six months; but in adults from six to twelve months. In Africa it would seem to take the place of measles and scarlatina, which are unknown, and is looked upon as a necessary ailment of childhood. It is not supposed to be infectious, but its contagion is undetermined; according to some, it is capable of being communicated by the discharges of an ulcer; and, in the West Indies, is believed to be conveyed from one to another by flies; nevertheless, it is strictly limited to the negro population. Like measles, scarlatina, and variola, it occurs only once in a lifetime. But, unlike those diseases, is never fatal.

---

[1] John Hunter makes some observations with regard to the phenomena of ulcers in the West Indies, which are suggestive of the cause of the granular vegetation of the ulcers of yaws. The granulations, he observes, "are luxuriant, though pale, and their surface glossy;" and this state may be "imputed to the bad habit of body associated with remittent fever."—*Observations on the Diseases of the Army in Jamaica.*

CAUSE.—The nature of the poison of frambœsia is unknown; the disease has been surmised to take its origin in syphilis, and has also been compared with leprosy. Dr. Angerstein of Nevis observes: "When yaws are neglected, they become constitutional; and in the case of careless, dirty negroes, present the appearance of leprosy." But there is good reason to believe that frambœsia is perfectly distinct, both from syphilis and the Greek elephantiasis.

TREATMENT.—Like as in other zymotic diseases the physician must wait on nature; the efforts of European medical men to control the disease have generally proved unfortunate; while the negroes, by making use of mildly aperient bitter decoctions, have been more successful in their practice; they use the same decoctions for local application, and in Africa dress the sores with an ointment of carbonized herbs.

CHAPTER XVIII.

SYPHILITIC AFFECTIONS.

THE diseases of the skin arising from the poison of syphilis or lues are the syphilitic eruptions or *syphilodermata*. These eruptions are to be considered as the manifestation of an effort on the part of nature to excrete or expel the poison of the blood through the skin; therefore, before entering upon their description, it may be desirable to glance at the phenomena of the syphilitic poison.

It is a well-known law of animal poisons, that, being once introduced into the blood, they excite in that fluid an action which has for its object the production of a similar poison, and this process goes on until the blood becomes saturated or overcharged with the morbific principle. As soon as this latter condition occurs, an inflammatory movement is set up, which results in the ejection or elimination of the poison.

This inflammatory movement, or syphilitic fever, is therefore a sign of the accumulation of the poison within the blood to such a degree as to disturb the healthy functions of the body, and is attended with symptoms which indicate derangement of the nervous, vascular, and digestive systems, and especially of those surfaces of the body through which it is possible for elimination to occur.

The blood is charged with a poisonous principle, and all the organs and structures supplied with that blood suffer to a greater or less extent. The brain evinces its suffering by mental dejection; the nerves, by a general feeling of prostration and debility. Everything is *couleur de plomb* around the patient; he is unable to pursue his avocations with comfort, and if they require the exercise of his mind, scarcely at all. He is oppressed with a sense of impending evil. Besides the lassitude and languor and weariness which evince the poisoned condition of the nerves, there is often neuralgia to an intense that the poison itself appears to be insufficient to light up the fever without the intervention of an accidental exciting cause, such as cold; and the exciting cause frequently determines the shape which the subsequent symptoms assume. Sometimes the leading feature of the fever is sore throat, sometimes neuralgia or rheumatism, sometimes iritis, sometimes cutaneous eruption, and sometimes periosteal inflammation; these differences of effect being partly due to the nature of the exciting cause, and partly, also, to the constitution of the individual.

One of the most striking of the phenomena of the syphilitic poison, is the modification or alteration which it undergoes in its manifestations, under the mere influence of time. These modifications are expressed by the terms *primary, secondary* and *tertiary*. With the morbid phenomena appertaining to primary syphilis we have nothing to do at present, as the syphilodermata all belong to secondary and tertiary syphilis, and principally to the former. Then the syphilitic poison undergoes another important modification, in consequence of being transmitted through the blood of the infected person, and being presented to a new person or to new blood, not in its crude shape, but as a modification. This latter phenomenon forms the basis of hereditary and infantile syphilis. Hence the syphilodermata admit of a primary division into *syphilodermata primitiva*, or syphilitic eruptions proceeding from the first poison; and *syphilodermata hæreditaria*, or eruptions resulting from the communication of the poison to the fœtus or infant. To these may possibly be added at some future period a class of *syphilodermata mitigata*, to include those modifications of syphilitic eruption which are observed where the poison has passed through the blood of another, and is presented to a new person, in an assimilated condition, in the secretions of the infected individual.

Then, taking syphilodermata as divisible into these principal heads, we have next to consider the eruptions of the *first period*, or those which correspond with the so-called secondary syphilis; and the eruptions of the *second period*, or those of tertiary syphilis. In like manner, we have in syphilodermata hæreditaria, a *first* and a *second period*.

To render this classification of syphilitic eruptions more clear, we have arranged them in the form of a table, as follows:—

I. SYPHILODERMATA PRIMITIVA.

FIRST PERIOD—

1. SYPHILODERMA ERYTHEMATOSUM.

Roseola syphilitica,
Maculæ syphiliticæ,
Erythema palmare.

2. SYPHILODERMA PAPULOSUM.

Lichen syphiliticus,
Lichen pustulosus.

ad appeared with the first attack of bronchitis, and in her own mind he connected the disorders together. It occurred to us, also, that the wo disorders might proceed from the same cause; that the bronchitis, ke the cutaneous eruption, might be maintained by the syphilitic oison. We treated this lady as we should have done an ordinary se of constitutional syphilis, and both affections got well together.

Thus far as to resemblances to the exanthematic fevers; but there re also differences between the syphilitic fever and that of the exanhemata, so remarkable as to call for special consideration. The exanhematous fevers are more violent, more regular, and more transient han the syphilitic fever; in other words, they are *acute*, while the yphilitic fever is *chronic*. It is true that instances of syphilitic fever ften happen, which present all the symptoms of the most violent ever, and are attended with delirium; but such cases are occasional, hey are the exception, and not the rule.

The cause of the differences of character perceptible between the xanthematous and the syphilitic fever appears to us to be due to a adical difference in the nature of the poison. The poison of measles, carlatina, and smallpox probably originates in conditions extraneous o the animal body; it reaches the blood as an element foreign to its ature, and as soon as it has accumulated to the saturating point, a viont effort is made for its expulsion. The expulsive effort obeys igidly certain laws of order and time, and the poison being once emoved, the blood of the patient may enjoy an immunity from a rexcitement of the same action for the rest of life.

How different are the phenomena which characterize the poison of yphilis. The syphilitic poison originates in the human body; it is robably little more than a modification of the natural secretions; it s consequently less irritant in its nature; and it tends to assimilate ith the blood and with the tissues, rather than to excite an action hich shall result in its removal. Hence the poison is slow in accumulating; its excitation of febrile symptoms seems rather a matter f accident than the consequence of an irresistible law; the patient njoys less immunity from a recurrence of the morbid action; and he poison is only partially removed by the febrile effort.

There is another striking difference between the exanthematic and he syphilitic poison. In the former, a second febrile attack never llows from the same original infection. In the latter, a second, a hird, and, indeed, an indefinite succession of outbursts of the poison s the common manifestation of its action. In the exanthematic fever, he blood and tissues of the body are so modified by the excitation ey have undergone, that they are indisposed to take on again a simir action. The poison of syphilis having once entered the system, e blood and tissues appear to become accustomed to its presence; remains latent for years, or for life, and gives notice of its existence om time to time by a variety of symptoms. Nay, more, it is transable to offspring, not merely to one, but, possibly, to a series of erations.

We have said that the occurrence of syphilitic fever seems rather effect of accident than the result of an immutable law. We mean, febrile symptoms, prostration of strength, and congestion of the mucous membrane of the fauces. Then follows the exanthem, which is spread more or less extensively over the surface of the body, being most perceptible on those parts which are covered by the clothes, especially the abdomen. The efflorescence remains apparent for a variable period, a few days or as many weeks; it is brightest in the evening and under the influence of excitement, and is attended, on its decline, with exfoliation of the cuticle. Very commonly it leaves behind it a fawn-colored or brownish stain, and a dry and sordid state of the skin.

Roseola syphilitica commonly presents itself in the form of undefined patches, giving to the skin an appearance which is best described by the term " mottled," *roseola versicolor*. The appearance is identical with that of common idiopathic roseola, or measles, and is due, like the two latter, to the manner of distribution of the bloodvessels in the skin. Perhaps the congested patch represents the ramifications of a single small arterial trunk; perhaps it embraces that small capillary system which is normally emptied by a separate venous trunk; perhaps, again, it includes the small district of skin the circulation of which may be governed by the ultimate divisions of one small nervous twig.

Occasionally the roseolous congestion is defined in its boundary, forming *circular blotches* of uniform redness, *roseola orbicularis*; and when this is the case, it often exhibits a tendency to spread by the circumference, while it fades in the centre, and so gives rise to an *annulate* form of roseola, *roseola annulata*. This annulate spread of congestion of the skin is another peculiarity of that structure, which is universal, and which also depends, very probably, upon the distribution of nervous influence. Again, the blotches may be irregular in figure, and of variable dimensions, *roseola diffusa*. Syphilitic roseola, therefore, may present itself to our examination under four varieties of form, namely, as a patchy and mottled redness, as circular blotches, as congested rings, and as irregular and diffused blotches.

Besides the varieties which depend on differences of form, there are others which are due to *degree* of congestion of the skin. In some the redness of the blotches is uniform, or nearly so; others seem to deserve the appellation *punctated*, from the more vivid redness and greater congestion of the follicular plexus or capillaries, *roseola punctata*; and in a third case the latter condition has progressed so far as to lift up the follicular pore, and produce an indistinct papule, *roseola papulata*. These differences, however, are mere differences in degree of congestion; the same morbid action exerting itself with greater or less force, or operating against a structure of greater or less strength; they are mere varieties of roseola, while roseola is only a variety or stage of the other forms of syphilitic eruption.

When the congestion of syphilitic roseola subsides, it leaves behind it a more or less stained appearance of the skin, and this is a common character of all syphilitic eruptions. The stain generally corresponds in figure with that of the eruption which preceded it, and is of a brown color of varying tint; deep, and almost approaching to black in per-mary vesicles and accompanied by a general eruption of papular vesicles or lichen. When the vesicle is ruptured in unfavorable conditions, irritable sloughing sores are sometimes formed and the fall of the crust is occasionally succeeded by a yellow, foul excavation.

The vesicles produced by primary lymph are very variable in appearance: sometimes they are "remarkably large and finely developed;" at other times they are smaller and "less developed than other vesicles;" but they "admit of a very remarkable improvement by transmission of the lymph through a series of well-selected subjects. By this process, also, in a very short time, most of the defects and some of the evils connected with the use of primary lymph may be dissipated and the lymph rendered milder, and more suited to general purposes." "Children are the best, certainly, for the purpose; and such should be selected as possess a thick, smooth, clear skin, and have a dark complexion and are not too florid, but still plump, active, and healthy." By a steady and judicious selection of these, and similar subjects, in a few (even three or four) removes, the severity of the local mischief becomes manifestly materially diminished, the vesicles acquire a magnitude and beauty often greatly superior to what is daily witnessed, and in a short time the lymph may be transferred with safety to others even more sanguine and robust, where, it is well known, lymph, if good for anything, will produce the finest and most perfect vesicles." "As we advance, we find the necessity of preparing the most objectionable subjects, and the advantage of subjecting many of them to the same preliminary treatment, which the best and most expert inoculators of smallpox formerly so successfully adopted for their patients; for it is a long time before some individuals can be safely vaccinated with this active lymph, even though taken from the mildest vesicle."

Recurrence to the primary lymph from the cow appears to us to be the only unobjectionable method of improving the current lymph, and correcting the deterioration which has arisen from neglect of the precepts of Jenner. Lymph from this source must necessarily be pure, and its use should therefore be encouraged.[1]

TREATMENT.—Any morbid conditions arising accidentally from vaccination should be treated in accordance with the general principles of medicine. Febrile symptoms may call for the employment of antiphlogistic remedies; and the local dermatitis, when it assumes a form of unusual severity, may be subdued by means of a compress of linen wetted in a spirituous lotion and covered with oiled silk, or by means of a piece of Alison's prepared lambskin saturated in

---

[1] Dr. Lichtenstein, in a paper entitled, "On the sources from which matter preservative against the smallpox has been derived," in Hufeland's Journal for 1841, remarks, that limpid lymph taken from the pustules produced by tartarized antimony, and inoculated in a person who has not been vaccinated, produces vesicles which cannot be distinguished from those of vaccinia. These vesicles appear to be equally protective against smallpox with the cow-pox, and the matter may be transmitted from person to person in the same manner. The author of the paper has inoculated and re-inoculated thirty-one persons with the matter procured from this source; and these persons were protected during an epidemic of smallpox, although placed in association with patients affected with that disease. Credat Judæus, non ego!

SYPHILODERMA PAPULOSUM.

LICHEN SYPHILITICUS.—When the eruptive force is sufficiently powerful to elevate the pores into distinct pimples, the case is one of lichen. It is no uncommon thing to find the mottled roseolous rash forming a base upon which the papules of lichen are developed; and their appearance, under these circumstances, seems to warrant the designation which we have given to the eruption, namely, *lichen corymbosus*;[1] for the papules in this case are grouped in clusters, varying from three or four to thirty in number, and suggest forcibly to the mind the idea of clusters of fruit.

Sometimes the lichenous papules, instead of being arranged in groups, are dispersed singly over the surface of the skin, constituting a *lichen disseminatus*;[2] and at other times they are packed almost as closely as the pores which they represent, *lichen confertus*.[3]

The transition of syphilitic roseola into lichen is so obvious, that it may be observed through every stage of its progress. A roseolous patch may be seen to develop papules by the mere swelling of the pores of the congested skin; and the small papules of lichen are occasionally converted into those larger elevations which are known as tubercles, by a sudden aggravation of the syphilitic fever, or by exposure to cold.

In a few instances we have seen the eruption of syphilitic lichen developed into the form of rings, constituting a *lichen syphiliticus annulatus*;[4] and a *lichen syphiliticus pustulosus* may be distinguished as resulting from a pyogenic action in the papule, the consequence of irritability of system, or depressed vital powers.

In a case of lichen corymbosus the papulæ offered some variety in point of size, those of medium bulk being about equal in magnitude to a millet-seed. They were of a dull red or purplish hue, and were collected into groups or clusters, varying in number from three or four to thirty. The majority of the clusters contained ten or twelve of these pimples; and, here and there, a few solitary ones might be observed dispersed among the clusters. The patch of skin on which the clusters were placed was slightly raised, wrinkled, and of a dull red hue. After a week of treatment the greater part of the pimples had subsided, and were each covered with a little, thin, brownish scale of desiccated epidermis; there was also an epidermal exfoliation from the altered skin which formed the ground of the patch. The patches had become brownish in hue, and contrasted strongly with the color of the adjacent skin, although the latter presented the muddy and yellowish tint of syphilitic cachexia. Some few of the pimples, however, still lingered, and contained at their summit a whitish pus, and here and there a single fresh pimple showed itself. At the end of another week every pimple was gone, and the ground of the patches was undergoing a general exfoliation.

In another case, one of lichen disseminatus, the eruption chiefly sons of dark complexion; of lighter hue, and verging to fawn, or a dead-leaf-like tint, in the fair. Sepia, tinged with red or yellow, would, in the hands of the artist, produce all the variations of color which the syphilitic stain presents. These stains of the skin are termed *maculæ syphiliticæ*. Sometimes the roseolous congestion which precedes them is so slight that they appear to be independent of such an origin; but this is not the case; they are always the effect of a congestive action in the skin. Whether, therefore, the maculæ syphiliticæ are primary in their appearance; whether they are consecutive upon roseola, or consecutive upon other forms of syphiloderma, they may be classed under the head of erythematous congestions. One variety of maculæ we have had occasion to distinguish from the rest, under the name of *melanopathia syphilitica*,[1] *melasma syphiliticum*.

---

[1] Portraits of diseases of the skin, Plate XXVI. A H.

[2] Ibid., Plate XXVIII. O.

[3] Ibid., Plate XXV. A L.

[4] Ibid., Plate XXVII. A N.

ERYTHEMA PALMARE.—Erythema palmare is sometimes associated with syphiloderma on other parts of the body, and sometimes purely local; it is also remarkable for its association with all the periods of the disease, with the latest as with the earliest, and for the variety of form which it assumes, varying in degree of redness, in amount of infiltration, in degree of desquamation, in character of limitation or circumscription, and in manner of increase. It sometimes appears as a single blotch in the centre of the palm, and sometimes as several; sometimes, and especially in the earlier periods, the desquamation is thin and superficial; at other times, the epidermis covering the inflamed spots becomes yellow and horny, cracks in the lines of motion of the skin, and exfoliates in thick layers. Sometimes the thickening of the derma is trifling, and the hyperæmia superficial; at other times the thickening extends more deeply, and the infiltrated corium evinces a disposition to crack. Sometimes the redness fades at the circumference; at other times the peripheral hyperæmia is more active than the central, and the border consequently somewhat raised. These are all phenomena common to the syphilodermata, but are the more striking for being seen in so limited a region as the palm of the hand or the sole of the foot.

Taking a general survey of syphilitic eruptions, they will be found to present two principal forms; the one being simply congestive, and unattended with elevation of the skin, the other presenting the obvious feature of elevation. To the *non-elevated* group belong roseola and maculæ syphiliticæ; to the *elevated group* the small pimples of lichen, and the larger pimples or tubercles of tubercular syphilis. These differences are, however, more apparent than real, and may be regarded as stages of development of the same disease. Roseola, by an easy gradation, is converted into lichen, or tubercular syphilis; and these latter, by simple subsidence, become syphilitic maculæ. Roseola papulata constitutes a link of transition between the *non-elevated* and the *elevated* form of the syphilodermata.

---

[1] Portraits of diseases of the skin, Plate XXXIV. M.

SYPHILODERMA PAPULOSUM.

LICHEN SYPHILITICUS.—When the eruptive force is sufficien powerful to elevate the pores into distinct pimples, the case is on lichen. It is no uncommon thing to find the mottled roseolous r forming a base upon which the papules of lichen are developed; their appearance, under these circumstances, seems to warrant designation which we have given to the eruption, namely, *lichen cor bosus*;[1] for the papules in this case are grouped in clusters, var from three or four to thirty in number, and suggest forcibly to mind the idea of clusters of fruit.

Sometimes the lichenous papules, instead of being arrange groups, are dispersed singly over the surface of the skin, constitu a *lichen disseminatus*;[2] and at other times they are packed almo closely as the pores which they represent, *lichen confertus*.[3]

The transition of syphilitic roseola into lichen is so obvious, it may be observed through every stage of its progress. A rose patch may be seen to develop papules by the mere swelling o pores of the congested skin; and the small papules of lichen occasionally converted into those larger elevations which are kn as tubercles, by a sudden aggravation of the syphilitic fever, o exposure to cold.

In a few instances we have seen the eruption of syphilitic li developed into the form of rings, constituting a *lichen syphili annulatus*;[4] and a *lichen syphiliticus pustulosus* may be distingui as resulting from a pyogenic action in the papule, the consequenc irritability of system, or depressed vital powers.

In a case of lichen corymbosus the papulæ offered some variet point of size, those of medium bulk being about equal in magni to a millet-seed. They were of a dull red or purplish hue, and collected into groups or clusters, varying in number from thre four to thirty. The majority of the clusters contained ten or tw of these pimples; and, here and there, a few solitary ones migh observed dispersed among the clusters. The patch of skin on w the clusters were placed was slightly raised, wrinkled, and of a red hue. After a week of treatment the greater part of the pim had subsided, and were each covered with a little, thin, brownish s of desiccated epidermis; there was also an epidermal exfoliation f the altered skin which formed the ground of the patch. The pat had become brownish in hue, and contrasted strongly with the c of the adjacent skin, although the latter presented the muddy yellowish tint of syphilitic cachexia. Some few of the pimples, h ever, still lingered, and contained at their summit a whitish pus, here and there a single fresh pimple showed itself. At the en another week every pimple was gone, and the ground of the pat was undergoing a general exfoliation.

In another case, one of lichen disseminatus, the eruption ch l the back and arms, but numerous pimples were scattered rest of the body and face. The pimples were large and iso- a dull red color, attained their full growth in the course of a , and then became filled at their summit, some with a turbid, ulent fluid, and others with a whitish pus.

---

[1] Portraits of diseases of the skin, Plate XXVI. A H.

[2] Ibid., Plate XXVIII. O.

[3] Ibid., Plate XXV. A L.

[4] Ibid., Plate XXVII. A N.

er mode of termination of the pimples is sometimes met with, ase of disseminated lichen, in which the pimples on the face the usual yellowish red or copper color which accompanies hilitic cachexia; they were large, prominent, and smooth, ng one line in breadth by half a line in height, and rose from the unaltered skin. The aperture of a follicle was t at the summit of each, marking the seat of the inflammatory on to be the capillary plexus of the follicle. The summit was ounded, not conical as in acne, and, unlike the latter, they ft to the touch, and had no tendency to suppurate. At the week they had a yellowish tint at the summit, which arose thickening and commencing separation of the epidermis, and r they were surmounted by a small conical crust, of a dirty- olor, consisting of desiccated sebaceous secretion, and remind- f miniature crusts of conical rupia. After a time the little hickened epidermis fell off, or where the conical crust of con- ebaceous matter had formed, this also separated, and the pimple ly subsided to the natural level of the skin, leaving behind it ish stain.

eir growth, maturation, and decline, these pimples, therefore ee stages for consideration: in the first they are smooth and l the color is vivid; in the second they are denser in structure, lor is dull, and they are surmounted by a small, yellowish hardened epidermis and sebaceous substance; in the third ey are declining.

SYPHILODERMA TUBERCULOSUM.

RCULA SYPHILITICA.—The tubercular eruption differs from nly in the size of the little elevations which give it its specific r. In lichen they are mere pimples, averaging from half a line in diameter, and representing the immediate circumfer- nce of the pores of the skin. Tubercles, on the other hand, ninimum size greater than that of the pimples of lichen, the measuring upwards of a line in diameter, while some have ter of three-quarters of an inch, and even more. They many pores, and often a considerable portion of the skin. and essential respects there is less difference between them: ult from the action of the syphilitic poison in the skin; both a mere transformation of roseola. We have already adverted ransition of roseola into lichen, and roseola into tubercula; conversion of lichen into tubercula is by no means uncommon. cles present some differences among themselves in respect of rm, density, and elevation; and they also differ in the manner th and arrangement. In point of color they are sometimes of a yellowish red, sometimes of that deeper hue which is known as "copper-colored," and sometimes purplish and brownish. In form, they are round, oval, or oblong, in the latter case being frequently crescentic in shape. In density they are sometimes soft and flabby to the touch, at other times firmer, but never hard; and, as regards elevation, they rarely exceed one or two lines, but are sometimes almost flat. In growth, they sometimes spread in irregular rings, and sometimes the separate tubercles have a tendency to assume the annular character; in one case the annular disposition being limited to a mere central depression (cupped tubercles, tubercula urceolata), and in another extending to a perfect ring of considerable size.

The color of syphilitic eruptions is often referred to as a pathognomonic character, and it is quite true that they present in general a remarkable dulness of hue, such as would result from an admixture of brown, in various proportions, with the three primary colors, red, blue, and yellow. The early stage of development of the eruption is that which possesses the greatest amount of red; in its second stage, and even in the primary, when developed in a languid constitution, the slower circulation of the blood through the capillaries, and the consequent carbonization of the blood, gives a bluish tint to the color; in other words, forms a shade of the secondary color, purple. In a third stage of the eruption, when the vascularity is subsiding, and renders visible the staining effects of the yellow element of the blood upon the tissues of the skin, the color approaches towards the secondary orange, or with less red becomes a grayish yellow. So that the same eruption, seen at different periods, may be a red of greater or less dulness, a purplish red, or a yellowish red; and the same differences of color may be distinguished in different individuals from the beginning of the eruption.

The color brown is called a neutral color, that is, it is neither red, blue, nor yellow; but, at the same time, a compound of the three. Hence the dirty hue of the skin in syphilitic cachexia is the result of the mal-composition of the blood, and, consequently, of the secretions; the excess of blue is probably occasioned by the presence of a surplus quantity of carbon; and the yellow, by a surplus of the pigmentary principle which gives color to the serum, the urine and the bile. The admixture of this brown color with the red and purple of common vascular congestion produces the dull or dirty red and purple above spoken of; and in like manner, the bright, or rather, clear, yellow stain of an ordinary bruise, would become a dull or dirty yellow by a similar admixture.

In making these remarks, we are supposing the red to be the archæus or predominating color; the eruption is primarily red, the red having a blending with blue on the one hand, and yellow on the other, but in both instances being rendered dull by the presence of brown. We have now to consider a series of tints in which the neutral admixture brown predominates. The brown may have an excess of blue in its composition, and be a *dark brown;* it may have an excess of red, and be a *red brown;* or it may possess an admixture of yellow in different proportions, and be an *orange brown* or a *yellow* *rown.* Now, of all these separate tints, the red brown with a slight admixture of yellow is that which most nearly approaches the hue of dull copper, and is, therefore, the type of the "copper-colored" eruption; the so-called copper color being, infact, a *reddish-yellow brown.*

We have felt the necessity of giving this explanation of the precise meaning of "copper color," from having observed that medical men were not agreed as to the color to which this name should be applied, and, consequently, that it was liable to be employed more loosely than is consistent with scientific accuracy. The copper color represents, in fact, a declining stage of the eruption, when the congestion is subsiding, and the yellow stain of the altered fluids of the skin shines through the purple of the blood. The "copper color," therefore, may have a greater or less amount of red and yellow in its composition, and be either a reddish copper color or a yellowish copper color.

As the copper color represents only a stage of an eruption, that eruption having probably passed through the tints of dull red, and dull purplish red, before it reached the reddish-yellow brown of copper color, it is clear that the term is objectionable when taken as a pathognomonic sign of a syphilitic eruption. For if we see the eruption at any other period than that of its decline, the characteristic tint is absent.

In the loose manner of using the term "copper colored" above referred to, we have frequently heard the dull purplish-red, the muddy red, and the yellowish-red, designated by that term. These colors, however, are by no means pathognomonic of syphilitic eruptions; they are commonly met with in chronic eruptions of other kinds; for example, in acne. Any one looking upon a case of indurated and chronic acne, associated, as is commonly the case, where the eruption depends upon mal-assimilation, with a sallow and muddy skin, must be struck with the close resemblance of such an eruption to one of syphilitic origin. Indeed, we have often seen non-syphilitic eruptions possessing more of the dull and muddy hue, which is generally supposed to be characteristic of syphilis, than syphilitic eruptions themselves. The color of eruptions of the skin must not, therefore, be relied on as proof of their syphilitic nature, although it may be fairly taken as a pathognomonic character where other symptoms tending to the same diagnosis are found to be present.

Syphilitic tubercles present some varieties which have reference to obvious diversities of character of development. For example, some are collected into patches of variable size, and are distributed, more or less generally, over the surface of the body; they correspond in manner of distribution with the corymbose form of lichen; hence we have named them *tubercula corymbosa.* Others constitute groups which are more or less solitary in their arrangement, and of variable size. The group is bounded by a distinct border of tubercles, which creep long the skin, and increase gradually the dimensions of the patch. The circumscribed character of such a patch suggests the name of *tubercula circumscripta.*[1] Others are scattered over one or several regions of the body as separate tubercles, *tubercula disseminata*;[1] in some the tubercles merge into each other and form a smooth bank, which expands into the figure of a ring, *tubercula annulata;* while others, again, belonging to either of the preceding groups, are apt to take on an ulcerative action, and establish a variety which may be distinguished as *tubercula ulcerantia*.

---

[1] Portraits of diseases of the skin, Plate XXX. A B.

TUBERCULA CORYMBOSA.—In a well-marked case of *tubercula corymbosa* the eruption consisted of soft, yellowish-red tubercles, with rounded summits, and but little raised above the level of the skin. The average size of the tubercles was one line and a half; when isolated they measured two lines, and there were some which reached four lines in diameter. They were dispersed irregularly over the surface of the skin, and had a general distribution in patches of various size and form; in some situations the patches being as large as the palm of the hand; in others small, and scattered between the former. On a close examination it became apparent that there was a prevailing disposition on the part of the tubercles to form circles or rings; and this character was discernible even in the large patches, which seemed to be composed of a number of rings confusedly clustered together. The rings varied much in size, some having a mere central depression, and measuring scarcely more than a quarter of an inch in diameter, while others had an ample area, and measured from an inch to an inch and a half. The tubercles presented some differences of appearance common to these eruptions during the progress of the disease. In the first instance, while the congestion was active, they were bright in color and perfectly smooth on the surface; when the congestion was on the decline they lost their brightness of hue, and looked faded and shrunken, the epidermis covering them having become opaque and wrinkled. Later, still, the epidermis became dry, cracked around the circumference of each tubercle, and peeled off, leaving a fringe around their base, and sometimes a small scale, the last remains of the exfoliating cuticle, on their summit. When the tubercles subsided altogether, leaving behind them brown stains, the skin presented a very remarkable appearance. The stains formed a number of brown rings, edged with a narrow margin of cuticle, and inclosing a centre of natural skin. In this state, the eruption would pass very well among the inexperienced for a declining alphos, and the broken laminæ of desquamating epidermis suggest a motive for considering it to be a squamous affection.

While the general characters of the eruption may be such as are now described on the body and limbs, it is not unfrequently considerably modified when developed on the face. Thus, in another case, the countenance of the patient was deformed by a tubercular eruption of a dusky-red hue. On parts of the face, and particularly on the exposed portions of the neck, the eruption consisted of distinct rounded tubercles, of large size. On other parts of the face the tubercles had the form of oblong mounds, more or less curved, and again, in other situations, formed complete circles. On the forehead the tubercles appeared to have become blended together, so as to constitute one single tuberous mass, of irregular shape, which extended across the brow, from one temple to the other. This mass was of a dusky-red color, with a tinge of yellow, which gave it a coppery hue, and there was a seeming transparency about it, which made it resemble brawn, or a portion of coarse and thickened skin, in a state of œdema, from infiltration of a yellow serum. To the touch, however, the swelling was hard, and evidently occasioned by a thickening of the skin, and not by simple infiltration of fluid.

---

[1] Ibid., Plate XXIX. N.

The trunk, as far as the waist, and the arms, were covered with the eruption, the tubercles, being more or less developed, and the corymbi more or less annular. In certain situations the tubercles were less fully formed, and appeared to be made up of a number of papulæ, very little larger than those of common lichen; and many of these smaller pimples, of a dirty hue, were scattered amidst the patches of eruption, or grouped around the clusters of tubercles.

On the lower limbs and lower half of the trunk of the body the clusters of tubercles had subsided to the level of the skin, forming so many darkish-red or brownish stains (maculæ) of a circular form. Many of these maculæ were sprinkled over with the dark remains of the papules, or with deeper-colored spots, which indicated the pores of the follicles. The maculæ were, for the most part, dark in the centre, fading away gradually to the circumference, and in some situations had the appearance of the stains of a bruise.

The general surface of the skin was dry, sordid, and discolored, and presented the character so constantly met with in cutaneous syphilis.

TUBERCULA CIRCUMSCRIPTA.—The eruption of tubercula corymbosa is *general* and *acute*; the eruption of tubercula circumscripta belongs to a later period in the existence of the poison, and is, consequently, *partial* and *chronic*. It occurs in patches, which vary in size from two to twelve inches in diameter; they are solitary or few in number, rarely exceeding six or eight; they consist of a confused assemblage of tubercles, among which there is an obvious tendency to assume a circular arrangement, and they are distinctly *circumscribed*, the boundary being formed by a line of tubercles.

The following is an illustration of tubercula circumscripta, appearing four years and a half after contagion; the subject was a man of thirty, and the number of patches seven, one large and six small. The large patch measured nearly eight inches square, and covered the greater part of the left side of the abdomen. It was composed, as were the others, of numerous dull-red tubercles, having an average measurement of two lines in diameter, dispersed, apparently without order, upon a ground of a dirty brown hue, and bounded by an irregular and slightly raised margin; in several places the tubercles had a circular arrangement, the rings being more or less complete. The smaller patches, about two inches in diameter, consisted of an irregular ring formed by a slightly elevated, reddish margin, inclosing an area of a yellowish-brown color, over which the eruption had crept. Within this area the epidermis was somewhat more wrinkled than that of the surrounding skin; and in the greater number of the patches

[illegible] scattered here and there one or two tubercles, which
[illegible] chronic state, while the rest had disappeared.

[illegible] regularly circular form and marginate character, these
[illegible] near resemblance to alphos in the state of retreat; even
[illegible] tubercles within the circles are met with in alphos. But
[illegible] strongly distinguishing characters, between alphos
[illegible] forms of cutaneous syphilis, namely, the coppery, or
[illegible] the latter, the yellow-brown stain which they leave
[illegible] after their decline; the softness of the syphilitic
[illegible] compared with those of alphos; and lastly and chiefly,
[illegible] of squamæ. In old syphilitic tubercles, the epider-
[illegible] be seen in a state of exfoliation; but the thin,
[illegible] exfoliating epidermis, peeling from their summits, are
[illegible] from the thick, circular, morbifically elaborated
[illegible] alphos. Moreover, in a syphilitic patch of the kind
[illegible] the cuticle may generally be traced unbroken from
[illegible] margin, over the whole surface of the diseased skin.

[illegible] large syphilitic patches (two inches in diameter) be examined
[illegible] at various stages, with reference to their mode of de-
[illegible] they will be found to originate in simple tubercles, dis-
[illegible] irregular circles of four, five, or six. The skin, included
[illegible] between these tubercles, partakes of the morbid action;
[illegible] become fused at several points, forming an elevated
[illegible] the margin extends by its outer lip, and increases the
[illegible] In this way a number of small rings, measuring about
[illegible] diameter, and creeping onwards by their circumference,
[illegible] so as to form a single patch. The onward growth is
[illegible] the peripheral margin of the collective patch (hence
[illegible] and its obvious composition of segments of small
[illegible] and margins left within the greater margin sub-
[illegible] completely, by virtue of a tendency on the part of
[illegible] on the exhausted ground, and prey upon the
[illegible] untainted soil; and, after a time, nothing of
[illegible] of the disease remains—all is lost but the slightly
[illegible] margin, and its sombre leaf-brown area.

[illegible] there existed a single patch of large size on the
[illegible] commenced as a mere pimple, which increased
[illegible] pea; some months afterwards, a second pimple
[illegible] attained the dimensions of a small tubercle, both
[illegible] out, and assume a circular figure; then one or two
[illegible] between the rings, and connected them, and in the
[illegible] the whole together completed a patch as large as
[illegible] annular character of the patch was well marked, the
[illegible] of a broken line of confluent tubercles, which
[illegible] surmounted by a thin covering of dry and desqua-
[illegible] There were several tubercles with desquamating
[illegible] of the rings, and the skin forming the ground
[illegible] reddish-brown tint.

[illegible] of tubercles appear on the face and exposed part
[illegible] a brighter color than elsewhere. This was the

se in a woman, the side of whose face and forehead was covered rith a patch of a bright copper color, which had continued in the ame state, with very little change, for twelve months.

On their subsidence, the patches of tubercula circumscripta someimes leave very little trace of their existence; at other times, they ave a brown stain; sometimes an injected state of the skin, and ometimes shallow pits. The copper color of the patches owes a part f its intensity to a varicose capillary plexus, and numerous meanderng venules, which may be seen on a close examination of the skin. ften, the tubercles seem to possess the power of disorganizing the tructure of the skin completely, without suppuration and without lceration; hence, when they disappear, they seem to be absorbed, nd with them that portion of the skin which they had assimilated to heir own structure, and they leave behind them deep and permanent its, and, where they are of large size and extent, strongly marked icatrices. The vascular congestion and shallow pits are both characeristic of the chronic form of syphilitic tubercular eruption of the kin.

TUBERCULA DISSEMINATA.—The disseminated form of tubercular ruption is *less acute* and *less general* in its eruption than tubercula orymbosa, thus evincing a later period of the poison, but more acute nd more general than tubercula circumscripta; occasionally it has een met with conjoined with the former. The tubercles are larger han those of the clustered eruption, perfectly round, and but little levated above the surface of the skin; in their appearance and elevaion suggesting an appellation by which we once distinguished them, amely, tubercula lentiformia. In point of measured size, the medium iameter of the disseminated tubercles may be roughly stated to be our lines, while that of the clustered tubercles is two lines and a alf.

In the case of a young woman, aged twenty-two, the eruption of ubercles covered the face, neck, and upper region of the back, some ew being scattered over the arms. They first appeared on the face, nd gradually extended downwards. The tubercles were perfectly ircular, isolated, and lentil-shaped, of a dull red, almost livid color, mooth, and uniform in size, measuring about a quarter of an inch in iameter. On the neck, the tubercles were less numerous than on he face, but somewhat more prominent and larger, one or two meauring more than half an inch in breadth. On the back of the neck, nd between the shoulders, were about fifty tubercles, for the most art isolated; some few, however, were grouped in pairs, and in two nstances a pair had become blended together. They were all exactly ircular, and more prominent than those of the neck, but the most rominent, even here, measured only three-quarters of a line in elevaon. In breadth, the extremes of measurement ranged between one ne and six (half an inch); the size of the greater number was five nes; the next common size measured two lines and a half; while low these were a number of smaller papules scattered among the st, and representing either the common papules of syphilitic lichen, the early stage of growth of the tubercles. The developed tubercles presented every degree of complexion and decline; some were smooth, others wrinkled, others beginning to desquamate, while in others, desquamation had advanced some stages.

In our observations on this case, we remarked that the tubercles were exactly circular in form, varying in size from one-quarter to three-quarters of an inch in diameter, very slightly raised above the level of the adjacent skin, evenly convex on the surface, and subsiding gradually from the centre to the circumference, which merges insensibly into the surrounding skin. In point of elevation and form, they have very much the appearance of split lentils laid upon the skin, only that they are much broader. Their color varies from a bright coppery red, to a dull, dirty crimson. Their epidermal covering changes with their stage of growth; in the first instance, when the tubercles are tumid, the cuticle is smooth, and they have a polished appearance; later, when the congestion of their vessels diminishes, the cuticle is wrinkled; and later still, the cuticle becomes loosened from their surface, cracks, and separates. Sometimes, but rarely, they pass into a state of ulceration, the ulcer commencing on the summit of the convexity.

The manner in which the exfoliation of cuticle commonly takes place from the surface of the tubercles is the following: the cuticle cracks in a circular direction, just within the boundary of the elevation, and then separates gradually from the surface beneath; the central piece separating towards the centre of the convexity; the peripheral piece towards the sound skin, and forming a kind of frill around its margin. A crop of tubercles may sometimes be seen presenting every gradation of this process of desquamation at the same moment. There are some in which the crack has just taken place; others, in which the edge of the central piece has been worn away, and has become reduced to a small disk, occupying only the central part of the convexity; others, in which the central piece is entirely gone; some, in which the peripheral portion is distinct; others, in which it is partly, and others, again, in which it is wholly, removed. The tubercle may now be left quite smooth, or secondary exfoliations may commence. The latter, however, are for the most part irregular and partial, and are not to be confounded with the primary exfoliation first described. When ulceration occurs, a crust is formed on the ulcerated surface; and, in proportion to the quantity of pus secreted by the ulcer, or the care with which it is kept, the crust may become very thick, or be a mere scale.

The tubercles of the disseminated variety of the syphilitic eruption are sometimes less distinctly round than those just described, less raised, and sometimes smaller, making it difficult to determine whether to class them under the head of roseola, lichen, or tubercula; but the elevation of the centre of the spots, although very slight, and the manner of exfoliation of the cuticle, generally determine the nature of the eruption when it belongs to the present group, assuming for the tubercles, as a distinction from the "lentiform" kind, the designation of "flat."

TUBERCULA ANNULATA.—The type of the annulate form of eruption is a tubercle, which spreads in a circular direction, so as to form a ring of variable breadth. Sometimes the tubercle itself seems to enlarge and constitute the ring, leaving an area in which the skin returns by degrees to its natural state; at other times, the tubercle would appear simply to communicate the impulse of growth to the skin immediately about its circumference, a ring being formed around the tubercle, and gradually enlarging, while the tubercle remains stationary in the midst of the area. It is to this form of syphilitic tubercle that the term *syphilitic lepra* (alphos) has been applied, and the resemblance is so great as to give a certain warrant to the error. The eruption is *subacute* and *partial* in its distribution, and appears to result from the agency of a modified or exhausted poison.

In the case of a young woman who suffered under this eruption, the tubercles were scattered over various parts of the body, but were most numerous about the neck. They commenced on the forearm by two spots, and gradually extended, first to the neck and hips, and then to her limbs. On the neck, the eruption presented every stage of progressive development. There were papules scarcely a line in diameter; tubercles, measuring from two to four lines; circular patches three or four lines across, with depressed centre and raised border; raised and papulated rings from half an inch to one inch in breadth, of a circular or oval figure, inclosing in their centre a large and irregularly-shaped tubercle; and one or two rings with a smooth area.

Many of the patches were in the state of desquamation; the exfoliation of the cuticle being chiefly apparent on the summit of the central papules, and upon the convexity of the rings. The scales, however, were obviously nothing more than desiccated epidermis, and very thin; and not, as in the case of alphos, epidermis altered in its anatomical structure, thick and laminated.

Sometimes the central tubercle spreads with the ring, and the whole seems to form one broad, soft patch, the ring being distinguished from the tubercle by a mere groove. In one case there were several of these broad fleshy tubercular patches bounded by an abrupt border.

In another case, that of a young man of twenty, the entire number of spots or patches did not exceed twelve or fifteen, and were distributed upon the hips, thighs and penis. Of two spots on the right hip, one was irregularly circular, the other oval; the former measured one inch and a quarter, the latter one inch and a half in longest diameter. They consisted of a central, broad, and fleshy tubercle, surrounded by a raised ring; both the tubercle and ring were of a deep, dull-red color, and the redness extended over the whole of the area included within the ring. The tubercle was wrinkled and smooth on the surface; the ring was marked by numerous transverse furrows, and was in a state of desquamation, the portions of desquamating epidermis corresponding in shape with that of the intervals between the wrinkles. On the right thigh there were four patches; one was a simple tubercle, measuring one line and a half in diameter, it represented the first stage of growth of the patch; another was a raised, flat, oval-shaped tubercle, half an inch in diameter, and appearing, from the elevation of its border, to be slightly depressed in the centre; the remaining two measured an inch, and an inch and a half in diameter, were oblong and oval in shape, and had each a broad and irregular central tubercle. Of the three patches on the penis, the largest, measuring an inch in longest diameter, had a central tubercle; the other two were smaller, and mere rings, inclosing an area of brownish and slightly corrugated skin, over which the ring had crept in its onward growth.

The resemblance of these patches to those of alphos circinatus was very striking, and we have no doubt that they would have been called lepra or psoriasis syphilitica by any one who had seen them; and yet their origin and mode of development was identical with that of tubercular syphilitic eruptions in general. They differed from alphos, however, in the absence of scales, an important point; and also in the presence of the central tubercle; the patches of alphos are depressed in the centre; these were more elevated in the centre than at the circumference.

In another example there was no central tubercle, and the eruption had more of the character of alphos circinatus than the preceding cases. The patient was a medical student: he consulted us for an eruption, which he considered to be common alphos, and its appearance was certainly such that it might have deceived men of more experience than himself. On the lower limbs were fifteen or twenty large rings, of a medium size of two inches in diameter. The area of the ring was smooth, and of a yellowish-brown color; the ring itself raised, dull-red, and irregularly circular or oval in its figure. On the side corresponding with the area, the elevated margin rose abruptly from the surface; on the peripheral side it declined gradually to the level of the surrounding skin. The breadth of the rings was between three and four lines; and their surface presented certain differences of appearance: in some, it was uniform and smooth; in others, marked by numerous transverse wrinkles; and others, again, were either papulated on the surface, or looked as if formed by the aggregation and fusion of numerous tubercles. There was a slight condensation of the cuticle covering some of the rings, and here and there an indication of epidermal exfoliation.

TUBERCULA ULCERANTIA.—One of the most striking of the peculiarities of syphilitic cutaneous disease, is the gradual and almost imperceptible transition by which one form passes into another. We have seen this peculiarity illustrated in the transition of roseola into lichen and tubercle; in the close alliance subsisting between the varieties of tubercles; and the same fact is perceptible in the gradual conversion of tubercles into ulcerations. These observations all point to the unity of the syphilitic poison; and the varieties evinced in the manifestation of the morbid effects of the poison, are such as might be anticipated from a knowledge of the varieties of constitution presented by mankind, and the varied conditions to which the poison must be subjected in its numberless mutations.

Even ulceration is exhibited to us in a transition state, in that curious phenomenon wherein a tubercle disappears, or is removed by rption, and leaves behind it a deeply pitted cicatrix, without any rnal signs of ulceration being perceptible; sometimes a slight t is formed on the subsiding mass; at other times, and especially r the influence of mercury, it sinks and is lost without a trace of ge in its outward appearance. In another series of cases a thin covers the summit of the subsiding tubercle; if we remove the a little moisture of an ichorous nature may be perceived, per- a globule of purulent secretion. We might be inclined to admit there was a slight abrasion of the surface, but scarcely that there ed a condition to which we could correctly give the name of ation. In a third series ulceration is unquestionable, but the re of the ulceration is of the *superficial* kind.

SYPHILODERMA VESICULOSUM ET PUSTULOSUM.

UPIA SYPHILITICA.—The only eruption coming strictly under the mination of vesicular and pustular syphilis, is rupia, an affection nding especially on a pyogenic condition of the constitution. r forms of pustule must be considered as instances of suppurating les and tubercles. We have ourselves fallen into the error of minating a pustular eruption, produced under the impulse of titutional syphilis, "impetigo syphilitica;"[1] upon further reflection hink it would have been more correct to have regarded it as a n passing into the state of suppuration. Such cases are by no s rare, and a pustular lichen may fairly be admitted among the sional phenomena of that eruption. We recollect an instance in h the greater part of the papules developed on the arms and legs syphilitic patient were gradually converted into pustules. Syphi- ecthyma seems to us to be also doubtful, but not so positively kely as the production of smaller pustules. Even in the instance thyma it is necessary that we should be well assured that the case t one of suppurating tubercle.

upia (Plate VIII.) is characterized by the eruption of small, sero- lent bullæ or large pustules, which are few in number, dispersed, surrounded by a narrow zone of redness. The bullæ contain, in first instance, a serous or sero-purulent fluid, which speedily be- es purulent or sanguinolent, and concretes and desiccates into greenish or blackish rough crusts. These crusts are variable in t of thickness; the larger ones bear some resemblance to the of the oyster; whilst others are conical in their form, being er in the middle than at the circumference, and not unlike the of the limpet. When the crusts fall off they leave behind them nic ulcers of a circular form and various depth, which secrete an dant, ichorous, purulent, and fetid fluid, and are indisposed to Rupia is tedious in progress, and lasts for several weeks or hs.

e varieties of rupia are founded on the extent and severity of the se, and on the thickness and form of the crust; they are,—

Rupia simplex, Rupia prominens.

---

[1] Portraits of diseases of the skin, Plate XXXI. Y.

RUPIA SIMPLEX.

Syn. *Ecphlysis rhypia*, Mason Good. *Sordid blain.*

In rupia simplex (Plate VIII. L, M, N) the purulent bullæ are circular in form, flattened on the summit, and in diameter about equal to a sixpenny or shilling piece. When first developed they contain an opaline fluid, which soon becomes purulent, and gradually concretes and dries up. As the secretion dries the epidermis around it shrivels, and eventually forms a brownish, wrinkled crust, somewhat like the outside of an oyster-shell. The crust is thickest in the middle, and is continuous at the circumference with the epidermis of the surrounding skin. It is thrown off after some days, and exposes a red surface, or a superficial ulcer, which may continue for several days longer. In the latter case a new crust is formed by the desiccation of the secretion upon the surface of the ulcer, and a succession of crusts may in this way be produced. When the ulcer heals its seat is indicated by redness or lividity of the skin around the cicatrix, the redness enduring for a considerable period. The more frequent situation of rupia simplex is the legs and lower parts of the body.

RUPIA PROMINENS.—The prominent rupia (Plate VIII. O) receives its designation from the projecting and conical form of the crusts which succeed the purulent bullæ. The pustules are of greater extent than in the simpler variety, and are followed by a troublesome ulcer of considerable depth.

Rupia prominens is preceded by several circumscribed patches of erythema or by tubercles, upon which the epidermis is raised slowly, and is distended with a turbid, dark colored fluid. The fluid soon concretes, and gradually desiccates into a thick and wrinkled crust of a brownish-black color. While the crust is proceeding towards completion the erythema slowly extends its limits, so as to form a narrow areola around the circumference of the crust. Upon this areola the epidermis is raised, and a fresh secretion of purulent fluid takes place beneath it, which increases the breadth of the crust. In this manner, by successive secretions, extending each time beyond the limits of the first formed scab, the crust is gradually enlarged at its base, and raised, more and more above the surface, so as to assume the characteristic figure of the limpet-shell. From its mode of growth the crust appears to be formed of concentric layers, projecting one beyond the other like tiles upon a house top; and when it enlarges in breadth more than in height it bears a close resemblance to the scaly shell of an oyster. The crust goes on increasing for several days, sometimes a week, and then becomes stationary. In this state it remains for a variable period, being at one time easily detached and at another firmly fixed. When detached, either spontaneously or by accident, it is found to conceal an ulcer of considerable depth, and of variable extent, being deep in proportion to the duration of the crust. The ulcer, when thus exposed, sometimes secretes a new crust, which grows thick by successive additions from beneath. At other times, and this is the more frequent course, the ulcer retains its open form, nting a foul surface, thin, livid, or pale, and excavated edges, and nflamed areola. The ulcer is difficult to heal, and after the formation of a cicatrix, leaves a livid and purplish stain, which continues many months.

his form of rupia occurs both on the upper and the lower limbs, more frequently on the latter. The bullæ are sometimes few in nber, sometimes numerous and successive; usually, however, there re only or a few at their height, while others may be threatening ppear, or on the decline. Sometimes the pustular bulla, instead pursuing the tardy course described above, is developed quickly, is filled with a viscous lymph, which subsequently becomes aque and purulent. In other instances, again, the inflammatory ness may be dissipated without the appearance of a bulla.

In rupia the pyogenic constitution may be idiopathic or accidental, both, as in the case of a young man of twenty, who received the fection of syphilis while in a debilitated state from immersion in a ver during the winter season. He had a chancre and suppurating ubo; the former healed readily, but the latter confined him to bed or nine weeks. Six weeks after infection a crop of red tubercles made their appearance on the face and head. The tubercles were round, as large as a split pea, and, after increasing in size for a few days, became filled in the summit with a bright yellow pus. Two or three days later the centre of the pustule had become brown, and was beginning to desiccate into a yellowish-brown scab. The margin of the scab, where it was continuous with the epidermis, was still yellow from the effusion of fresh pus, while a narrow halo of redness indicated the inflamed skin around its circumference.

After another period of six weeks from the outbreak of the preceding attack, he was seized with sore throat and severe pains in the limbs, which increased at night; the fauces were much inflamed, and there was ulceration of the tonsils and pharynx. His face at this time was studded over with yellowish-brown crusts; there were several on the scalp, and a few on the limbs and back; altogether the number distributed upon the face and head amounted to sixty-eight.[1] The eruption presented itself in all its stages of development and growth: there were simple tubercles, others surmounted with yellow pus, and others covered with crusts possessing every gradation of growth. The crusts bore the aspect of being laminated; some were irregular, others pretty evenly limpet-shaped; while a few were broken into small fragments, and had a mulberry-like appearance. Upon the eyebrows they had uprooted the hair and carried it with them, so that, on superficial inspection, they seemed tufted with hair. There was also some difference of color: in those most recently formed a reddish-yellow predominated; the older ones were brown, with a tinge of green or yellow; and those which had been caught by the dress or by the bed-clothes were black from being stained with blood.

The elevation of some of the crusts was three quarters of an inch, and such crusts had generally the conical shape (rupia prominens,

---

[1] Portraits of diseases of the skin, Plate XXXII. W.

Plate VIII. O), that particular form being partly the result of freedom from injury, and partly the consequence of the slow and gradual peripheric extension of disease in the skin. On the side of the cheek one of the crusts was thicker below than above, from gravitation of the imprisoned pus; and on the upper lip, near the margin of the prolabium, there were two, of a circular and conical form, which curved downwards to the mouth, and were not unlike the beak of a hawk. The largest of the crusts was situated on the front of the thigh, and measured nearly two inches in diameter: it was dark colored from effusion of blood, thin, and of the oyster-shell kind.

In its relation to the surrounding skin, the exterior pellicle of the crusts was continuous with the epidermis; this portion of the pellicle was of a lighter color than the rest, and covered a layer of newly-effused pus. By a little pressure the pellicle in this situation might be broken through all round, and by a slight increase of force, the crust might be removed entirely, showing it to be a hollow cone filled with a thick and tenacious pus, and based upon an indolent and unhealthy ulcer.

The ulcers which constitute the base of the crusts of rupia have been aptly termed "atonic." When they have made but little progress in depth, they present a coarsely granular surface, interspersed with irregular fragments of undestroyed skin. A little later, when the ulceration reaches the deepest stratum of the corium, the tissues of the latter may be detected among the granulations, forming an open network; while, at a still later period, the corium is entirely destroyed, the exposed subcutaneous tissue is frequently smooth, or the granulations are few and scattered, and the hollows are filled with whitish and yellowish lymph. The edges of these ulcers are generally pale and smooth, without being raised, and they are undermined to a greater or less extent. When the ulcers of rupia heal, they leave behind them ugly cicatrices, with more or less of a purplish hue of the skin, and often a deep brown stain.

SYPHILODERMA PILARE.

ALOPECIA SYPHILITICA.—The fall of the hair, alopecia, sometimes follows the syphilitic fever, in the same manner as it is met with as a sequela of measles, scarlet fever, or fevers of any other type. Under the influence of the constitutional action present in these fevers, the formation of the epidermis and hair is temporarily suspended, the epidermis exfoliates as a consequence, and the hair falls. Where the fall of the hair is a chronic action, it probably depends upon insufficient nutrition of the skin; a condition especially characteristic of syphilitic cachexia.

In a disease so important and serious as constitutional syphilis, the fall of the hair, even as a symptom, is not calculated to excite more than a passing notice. If it be sought for, it will be found very frequently; but occasionally it is brought under our attention by the immediate inconvenience to which it gives rise. The hair does not fall off evenly, but comes out in patches, that have sometimes the appear-nce of area, but without the thinness and paleness of skin of the tter disease.

We are often consulted for alopecia where syphilis is not suspected, nd in these cases, we subject our patient to a careful scrutiny for the etection of any symptom which might indicate its dependence on the yphilitic poison. Sometimes we have succeeded in discovering such symptom, however obscure, and then the treatment applicable to onstitutional syphilis has been remarkably successful. In one case, he concurrent symptom was a tendency to neuralgia; in another, a uddy skin, with occasional sore throat; and in a third, a milky spot r a fissure on the tongue.

The following is an example of alopecia, depending on syphilis: a entleman contracted a venereal sore, the nature of which was doubted t the time by his medical attendant, and a week was allowed to transpire before he commenced taking mercury. He then took blue pill ntil his mouth was affected; the sore healed in three weeks. Three months after the sore, his hair began to fall off in considerable patches, nd a month later he had sore throat. On the occasion of his visit to s the hair was falling abundantly, it was parched and shrunken as if dead, and the scalp was dry and scurfy. Upon examination we found the stain of a syphilitic tubercle on the nape of his neck.

SYPHILODERMA UNGUALE.

Onychia syphilitica.—The matrix of the nails is not unfrequently affected with redness, swelling, suppuration, and often ulceration, under the inflammation of syphilis, and the case is one of syphilitic onychia. Sometimes one finger or toe alone is invaded, at other times several may be attacked at the same moment. The skin immediately around the nail is considerably puffed and swollen, often the whole extremity of the finger or toe is enlarged; suppuration and superficial ulceration occur between the skin and the edge of the nail, fungous granulations are formed, which partly overlap the nail; the suppuration extends beneath it, and the nail is, in consequence, more or less loosened. This state of disease is extensively painful, but quickly gets well under the influence of general remedies.

Syphilitic degeneration of the nails is also met with occasionally as a consequence of the presence of the syphilitic poison in the blood. The nails are apt to be altered in structure, they are discolored and brittle, thinner or thicker than natural, and rough and fibrous in texture. Sometimes they fall off, and are succeeded by others more faulty than themselves, and sometimes this morbid condition of the nails is accompanied with erythema of the matrix, or of the skin immediately bordering the edge of the nail.

SYPHILODERMATA PRIMITIVA.

Second Period.—(*Tertiary Syphilis.*)

The effects of the syphilitic poison on the human constitution are so tered and modified by time, that the distinction of the constitutional symptoms of syphilis into secondary and tertiary is universally recognized. It does not, however, follow, that these are necessarily connected with each other in the order of their apparent sequence; for the secondary or constitutional disease may be present without any primary disease having existed; and the tertiary symptoms may be evolved without the intervention of any secondary affection. Nor does time necessarily bring about similar changes in similar periods; the effects, besides being modified by time, also subserve the powers of constitution of the individual, and are consequently developed more rapidly in one person than in another. Again, the primary symptoms sometimes merge into the secondary, and the secondary pass so gradually into the tertiary, that it becomes often difficult to draw with certainty a line between them. These considerations must always be borne in mind in our observations of this class of diseases, and our diagnosis as to the period of the disease must be founded, not merely upon time, but also upon decided pathological characters.

The syphilodermata which belong to the *second period*, that is, to the period of tertiary syphilis, may be arranged under three heads according as they present, in chief, the characters of erythema, of tubercle, or ulcer. To the *erythematous group* belong erythem squamosum palmare et plantare. Under the head of *syphiloderma tuberculosum* are to be considered, tubercula mucosa, tubercula ulcerantia, superficial and deep, tubercula ulcerantia lupiformia, and tubercula gummata; while the *syphiloderma ulcerosum* exhibits one of the destructive attributes of syphilis when the latter has gained long possession of the system.

ERYTHEMA SQUAMOSUM PALMARE ET PLANTARE, SYPHILITICUM.

Erythema squamosum palmare commences usually in the middle of the palm of the hand, in one of the grooves of flexion, as a reddish spot, over which the cuticle becomes hard and yellow, from destruction of its vitality, and soon after cracks and exfoliates, leaving a red surface beneath, covered by a new epiderm. Sometimes this process begins at the same moment in both hands; sometimes it exists in one only; sometimes it takes place in the soles of the feet as well as in the palms of the hands. Often there is only one of these dry, red crackling, uncomfortable patches on the hand; at other times there may be several; for example, around the ball of the thumb, on the wrist, in the lines of flexion of the fingers. The exfoliating erythematous patch may continue in the state now described for weeks, months, or years, with little or no change. Sometimes it exhibits a tendency to spread, and then it creeps slowly along the fingers to their tips, along their borders, around the borders of the hand, or upwards upon the wrist. Occasionally, and less frequently, it reaches the back of the hands and back of the fingers, and once we met with a case in which its principal seat was the back of the hand. But whether it be partial or general in its attack on the hand, it is always the same red, inflamed, hot, cracked, exfoliating surface; sometimes, but rarely, the tender derma, newly exposed by the peeling off of the skin above, cracks, then a little blood escapes, and the crack heals; sometimes dry cracked cuticle is the cause of the fissure of the skin; rarely, a little suppuration takes place.

Sometimes the patch exhibits a tendency to enlarge by centrifugal growth, *erythema squamosum palmare centrifugum*, and presents the annulate character already referred to under the head of syphilitic tubercles. In the case of centrifugal growth, the border is defined, the area presents the red, dry, cracked, and exfoliating character above described. The ring may be small or large, running out upon the fingers in one direction, and upwards upon the wrist in the other. As soon as it becomes stationary, a new inflammatory process may begin in the centre of the ring, and a second, a third, and a fourth ring may be formed in succession, affording a curious and remarkable example of cutaneous disease.

Sometimes the ring possesses a tubercular character, and is slightly raised, is, in fact, an instance of the annulate tubercle in the palm of the hand. We have delineated a case of this kind in our "portraits of diseases of the skin," under the name of erythema annulatum palmare.[1] We had not at that time detected the syphilitic nature of the affection, and had only seen one or two cases; we have examined many since, and, with a slight alteration in the arrangement of the words, we have retained the name we then gave to it, namely, *erythema squamosum palmare annulatum.*

The erythema *squamosum* palmare annulatum syphiliticum differs from the forms previously described by getting well in the area while the circle expands. The circle may remain for a long time cracked and angry, but the area recovers its healthy structure and appearance completely.

In a case of erythema *squamosum* palmare of one hand, with syphilitic tubercles on other parts of the body, the disease of the palm was a circular ring, the epidermis being hard and dry and slightly raised, and the area of the ring dry and cracked. The patient had several such rings of small size on his wrist, a half circle on the breast, and a large broken circle with a cluster of scattered tubercles within its area, on the buttock. These eruptions had been in existence for ten years; that on the hand had got well and broken out repeatedly, but the patch on the buttock had continued from its first appearance being sometimes better and sometimes worse.

In another case, one of erythema *squamosum* palmare centrifugum,[2] with a similar affection of the skin of the penis, the eruption occupied the whole of the palmar surface of the hand and fingers extending partly to the back of the latter. The leading features in the appearance of the hand were, a vivid redness of the entire surface, bordered by an abrupt margin of a deeper red than the rest; a swollen state of the diseased skin, a raggedness of surface, arising from irregular exfoliation of epidermis, and a cracked and bleeding state of the deeper grooves of flexion of the fingers. The cuticle had been repeatedly thrown off from the inflamed surface, and the centre of the palm was smooth, of a vivid pink color, and covered by a thin coating of newly formed and smooth epidermis. On other parts of the surface of the hand, the newly formed cuticle was in a state of exfoliation. The inflamed skin of the penis had resulted from the extension of two patches of annulate tubercle, the borders of which formed the boundary of the disease. The border was several lines in breadth, and covered by a broken layer of desquamating epidermis; while the area of the patches was red, furfuraceous, and exhibited a tendency to crack in the direction of the lines of motion of the skin.

---

[1] Plate XIX. K.

[2] Portraits of diseases of the skin, Plate XXI. A. T.

Erythema squamosum palmare syphiliticum is a syphiloderma of the second period, namely, that of tertiary syphilis, and is among the latest of the evidences of the presence of the syphilitic poison in the blood. In five cases, in which we noted the period intervening between the primary disease and the affection of the skin of the palm of the hand, we found the time to be respectively four, eight, nine, and ten years; and, as an illustration of the persistence of the disease in this region, the same five cases gave, as the periods of existence of the disease up to the time of our seeing the patients, nine months, three years, six, nine, and ten years.

Not unfrequently we meet with cases wherein the syphilitic infection is recent, dating back to a few months, in which, simple erythema, like that which occurs in infants, is developed. In this case a copper colored redness spreads over the palm of the hands and palmar surface of the fingers, the integument is thickened, somewhat indurated or stiffened, and cracked in the lines of motion; but there is no desquamation such as happens in ordinary cases of erythema squamosum palmare, where the affection is of many years' duration. These cases yield to the iodide of potash, which the erythema squamosum does not.

ERYTHEMA SQUAMOSUM PLANTARE SYPHILITICUM is identical in its mode of origin and growth with erythema squamosum palmare syphiliticum; a good example of this eruption will be found among the "portraits of diseases of the skin," Plate XXII. AV.

An erythematous syphiloderma, very much resembling lupus erythematosus, is met with in old standing cases of tertitary syphilis, and in conjunction with other forms of syphiloderma, both tubercular and ulcerative, thus placing its connection with the second period of syphilodermata beyond question. It is also met with, presenting exactly the same characters, where none but hereditary, or the remains of infantile syphilis can be present, hence we have termed it *syphiloderma erythematosum hæreditarium.* Thirdly, it occurs occasionally under circumstances of, and with appearances involving, so much obscurity, that we have thought it necessary, for the present, to transfer its consideration to the group whose name it bears, namely, lupus. At a future time, we hope to be able to unravel more completely the entanglement which envelops this very peculiar and very troublesome and obstinate disease.

SYPHILODERMA TUBERCULOSUM.

UCOSA.—When syphilitic tubercles occur on parts of
there is naturally an increased degree of moisture, or
kept in a softened condition by morbid secretions,
assume a state of chronic growth. Such tuberculous
med soft or mucous tubercles or condylomata. Their
on is the perinæum, particularly in the female, where
favored by the secretions of the vulva. They are
y found between the greater labium and the thigh, on
the femoro-scrotal groove, around the anus, in the
cillæ, and upon the lips. These tubercles belong to
ertiary syphilis, and are the common consequence of
philitic poison; appertaining in that case to the new
propose to make, under the name of syphilodermata
ous tubercles are far from uncommon on the inside of
a, and in the neighborhood of the vulva of married
hey exist for years without attracting any attention.
ry state they are very little raised above the level of
integument, but occasionally they enlarge and are
id sometimes become the seat of superficial ulceration.
VEGETATIONS, due to the exuberant growth of the
mucous membrane and skin, are another form which
to present in situations frequently or permanently
secretions, such as the inner surface of the labia
iole extent of the vulva, the perinæum, the circum-
nus; and, in men, the fossa coronæ glandis and the

LCERANTIA.—Ulceration of tubercles may be either
ep; and in either case it may be stationary or pro-
ration is one of the phenomena of syphiloderma which
to indicate the long period of existence of the poison,
diagnostic of the *second period*, or that which corres-
iary syphilis. When the ulceration is stationary, it
ie summit of the tubercle, and extending its circum-
ees, delves into the substance of the skin more or less
however, it is progressive, it creeps on by the cir-
acquires the name of *serpiginous*, sometimes creeping
to a considerable extent. At other times, the creep-
ring action are combined, and the horse-shoe ulcer is

erated tubercles are more common than the superficial,
nt seat is the head and face; but they are also met
irts of the body, as on the back and loins, the limbs,
The ulcers are more or less deep and hollow, they
ous or semi-purulent fluid, and are excavated in the
med, red and congested skin. Sometimes they occupy
rcula circumscripta, and are so numerous as to give a
honeycomb appearance to the surface of the patch.

Sometimes a solitary tubercle is the seat of ulceration, and sometimes the annulate form of tubercle is attacked by the ulcerative process.

Syphilitic ulceration has frequently a progressive and centrifugal action, and in most instances one side of the tubercle will be found more deeply ulcerated than the rest; or the ulcer will be observed to increase by one side while the process of healing is slowly taking place at the other; this is the so-called "*horse-shoe ulcer,*" a term which indicates its appearance sufficiently clearly. In the horse-shoe ulcer, the integument is much congested and thickened on the side of the ulceration, while at the opposite side it is uniform with the level of the surrounding skin.

The centrifugal action of the ulcerative process is, perhaps, most remarkably shown in the superficial ulceration which sometimes attacks the annulate tubercle; and the process is so rapid as to have obtained the designation of *serpiginous.* We once saw a man, partially bald, whose head was covered with these serpiginous wheals; they were coated with a thin, squamous scab, and curved around his temples like a pair of ram's horns. In another case the circles formed a necklace, descending for a short distance upon the breast and back. This latter case is illustrated in our "portraits of diseases of the skin," Plate XXIII. A Q, under the name of *psoriasis gyrata syphilitica;* properly, it is a syphiloderma annulatum ulcerans, or it may be termed tubercula annulata syphilitica ulcerantia, or tubercula ulcerantia serpiginosa syphilitica; it is the syphilide pustuleuse serpigineuse of Alibert.

TUBERCULA ULCERANTIA LUPIFORMIA.

As tertiary syphilis becomes settled in the skin, it is remarkable how exactly it acquires the resemblance, and assumes the characters of lupus, until at last it becomes difficult, and sometimes impossible, to distinguish between them; and a kind of lupus is generated, which is recognized as being the result of the syphilitic poison in its tertiary state.

In lupiform syphilis there may exist one or several tubercles grouped together; the affected skin is thickened, hard, of a purplish red hue, and upon one or more of the tubercles a thin black crust is formed. If the crust be removed, a deep excavated pit, filled with unhealthy pus, and discharging a sanious fluid, is seen beneath. The ulcerative action is slow and gradual, lasting for months without change. At other times the ulcerative action is more rapid; several of the pits communicate, and a large unhealthy ulcer is formed, which destroys the part upon which it is situated, and is followed, on getting well, by an indelible cicatrix, with puckering and contraction of the surrounding skin. When the ulcer is situated on the nose, a portion of that organ is destroyed, and much deformity results; and equal mischief, although unaccompanied by the like deformity, may occur upon any part of the body.

When a cluster of tubercles are assembled together, forming a patch of diseased and disorganized skin, and the surface is perforated y several deep ulcerated pits, the affection resembles lupus still more losely.

TUBERCULA GUMMATA.

The modification of syphilis by time is one of the most curious of ts phenomena, and, at the same time, one which enables us, by tracing ts mutations, to recognize in it a form so very different from its riginal shape, that nothing but a process of inductive reasoning could etermine its identity. In a gentleman who had given evidence of he presence of the syphilitic poison in his blood for upwards of wenty-five years, there are now developed, since the completion of his period, several round tumors (tubercula gummata) in and beneath he skin, which evidently originate in the same cause. The tumors re about the size of marbles, three or four in number, and hard and omewhat elastic to the touch. They are situated in the left forearm, wo or three being to all appearance in the cellular tissue under the kin, and one in the skin itself. The latter is slightly red and tender, nd looks as if it would merge into a state of ulceration.

The peculiarity of these tumors is, the great distance of time which ntervenes between their occurrence and the reception of the poison. And, in this particular, they seem to deserve a place by themselves nder the title of "chronic syphilis;" or, if it be preferred, tertiary yphilis. In their hardness they remind us of cancer, and are very ikely to be mistaken for malignant disease. When they ulcerate, hat process takes place very slowly, and generally on one side, while y the other they continue to grow; hence the ulcer has more or less f a horse-shoe figure, and the tissues over which it has passed, heal, ut leave an indelible cicatrix. The ulcer is slowly destructive, and xhibits no tendency to granulate; sometimes it dissects out certain issues with great neatness. The situation in which we have seen hese ulcers in a state of progress, is the integument immediately in ront of the ear; the following as an example: A gentleman, aged ifty, has an ulcerated sore immediately in front of the tragus of the eft ear. It has occupied its present position three or four years, but atterly has been enlarging. It is now of about the size of a half-rown piece. On the side next the temple it is bounded by an levated mound of thickened skin, into the base of which the ulcer eems to burrow. The ulceration has dissected out two ligamentous ands in front of the tragus, and has isolated them completely. It is evoid of granulations, gives rise to no pain, and secretes no pus. he surface exudes a small quantity of a transparent and colorless hor, which, left to itself, dries up into a thin scab.

Another gentleman, between fifty and sixty, has a tumor of this ind excavated at its base by a deep ulceration, the latter being vered with a slough. He has suffered from the disease sixteen ars; and although existing for so long a time, the ulcer now is arcely larger than a shilling. It is of the horse-shoe form, and has rrowed into the base of the hypertrophied skin constituting the nor. The ulcer is situated immediately in front of the tragus. The n of the temple in front of the ulcer, and, indeed, as far as the angle of the eye, presents the appearance of a cicatrix, and along its border is an impetiginous eruption, which has crept over, and is the cause of the cicatrized skin. In this portion of the skin, and particularly in the neighborhood of the ulcer, are a number of enlarged venules.

SYPHILODERMA ULCEROSUM.

Syphilitic ulcers sometimes take on a more extensive character than that already described; the ulcers are large, unhealthy-looking, and frequently phagedænic, their edges are angry and excavated, and the skin around, red and indurated; sometimes their surface is dry, sometimes it pours forth an acrid ichorous discharge, and sometimes they are filled with a transparent reddish jelly-like substance. These large ulcers are most frequently met with on the face, but they are also seen occasionally on other parts of the body. In one case we found a large phagedænic sore on the calf of the right leg, a smaller sloughing sore near the tendo-Achillis, and several cicatrices, each as large as a half-crown. On the left leg near the ankle, was another unhealthy-looking sore, of considerable magnitude. The skin surrounding the sores was of a deep-red color, indurated, and apparently infiltrated; the edges of the phagedænic sore were dry, black, and excavated perpendicularly, and the floor was covered with a gray magma. There was no trace of pus, and in the large sore no secretion of any kind.

SYPHILODERMA HÆREDITARIA.

We have next to consider the modifications of syphilis in another point of view, namely, in its effects upon the offspring of syphilised parents, constituting *hereditary syphilis*. The transmission of the poison, in this instance, is indirect, passing from the father to the mother, and from the mother to the fœtus, the mother, in this case, being a sufferer by the transit or wholly unaffected, being, in fact, the mere material of communication between the contaminated source on the one hand, and the newly-formed being on the other. In other cases, the mother may be herself the primary source of the poison, and the father quite free from inculpation, the case being then one of direct transmission. Of a similar kind is the propagation of syphilis to an infant by means of the milk of the nurse. *Infantile syphilis* is therefore not always hereditary; it is transmitted when the poison is imbibed with the milk intended for its nutrition, and is hereditary only when it is received in the womb of its parent. But the difference in the two cases is not so considerable as might at first sight be imagined; the poison is in both instances a secondary poison, modified and chastened by transmission through the blood of another individual.

It is not impossible in the adult to have secondary syphilis, that is, constitutional syphilis, without any primary disease; we have met with such instances. In the transmission of the secondary poison, secondary disease is more frequent; thus, the newly contaminated wife, her husband being locally sound, is probably affected from the first with secondary or constitutional syphilis, and has no local disease; or if there be local disease, such disease is of a secondary or tertiary nature, such as morbid secretion and mucous tubercles. And, in the case of the infant, unborn or born, it is obviously the secondary disease, or constitutional syphilis, which is transmitted.

SYPHILODERMA HÆREDITARIUM ERYTHEMATOSUM.

Syn. *Syphiloderma erythematosum marginatum; erythema syphiliticum infantile; alphos syphiliticus infantilis.*

The more common form of manifestation of constitutional syphilis in infants is erythema of the hands and feet, with epidermal exfoliation; small circular and slightly elevated tubercles, with depressed centres (cupped tubercles), looking like alphos in process of peripheral extension, and without scales; erythematous patches, of various extent and figure, also slightly raised above the surface; and excoriations and fissures around the apertures of the body, the seeming consequence or acrid humors. Then the disordered state of the mucous membrane is manifested by acrid discharges from the eyes, nose, mouth, and often ears; moist excoriations at the angles of those apertures; aphthæ and congestion of the mucous membrane of the mouth and fauces; a clogged state of the air-passages; tumefaction of the membrane of the trachea and larynx; and, not unfrequently, diarrhœa.

Sometimes the exfoliation of the epidermis of the hands and feet takes place at birth, the process having commenced in the womb of the mother; at other times, the first symptoms of syphilis are not apparent for three weeks, six weeks, and even later. In an instance of exfoliation at the time of birth, the child, although arrived at the full term, was small, thin, and shrivelled, and the blood oozed out copiously from the denuded surface of the hands and feet; the blood was more diffluent than natural, and resisted all means to arrest it, and the child died in the course of a few days. The appearance of the feet and hands suggested to the accoucheur who attended the mother a total absence of the skin.

The first symptoms of the syphilitic affection were evinced in an infant of five weeks, otherwise plump and well-looking, by the development of what seemed to be a common but severe catarrh. Its mouth and lips were dry and parched; it had cough; and its throat and air passages seemed clogged with a thick, viscid mucus. It was nearly in this state at the sixth week. When we saw it, the mucous membrane of the mouth, as far as could be seen, was congested, and spotted with the white films of aphthæ; the voice was hoarse, and husky, and the lips and angles of the mouth cracked and excoriated. There was a viscous secretion from the nose; the child was emaciated; and its skin dry. An inflamed state (erythema) of the feet was apparent at birth, and was followed soon after by a similar state of the hands; the cuticle was thrown off in large flakes and by repeated exfoliations, leaving the skin beneath very tender, and giving rise to cracks, of various extent, in the direction of the joints. Some of the cracks extended quite around the fingers, were of considerable depth, and bled a good deal.

In another child, three months old, there appeared an extensive erythema covering a considerable part of the surface of the body. The eruption was of a dull red hue, slightly raised above the level of the surrounding skin, smooth as though tumid, lustrous like metal, exfoliating in some situations, and distinctly circumscribed, the border being slightly raised, and paler than the rest of the patch, reminding us of the wheals of urticaria. On the nates and thighs were several circular spots about as large as a sixpenny-piece, very slightly raised, particularly at the border, and depressed, or cupped, in the centre.

On the face the erythema was chiefly situated around the eyes, nose, and mouth, and on the cheeks in the course of the tears. The eyelids were inflamed and swollen, the eyes moist, and there were excoriations at their outer angles. There were also excoriations around the apertures of the nose, and at the commissures of the mouth. The nose was filled with mucous secretion, and the nasal respiration snuffling; the cry was hoarse. On the limbs the eruption occupied chiefly the outer side of the arms and legs.[1]

In a more advanced stage of the disease, the erythema having subsided on the feet and hands, had left behind it an exfoliation of the epidermis; the head was covered with dandruff and scurf, while on the nates there were numerous tubercular spots of a circular figure, about the size of a sixpence, with raised margin and depressed or cupped centre, of a dull red color, and bearing a close resemblance to the spots of alphos divested of their scales. The child was thin and weakly, its skin muddy and rough, the conjunctivæ congested, and the eyes weeping; there was a copious discharge from the nose, a thick, mucous secretion clogging the mouth and fauces, a viscous phlegm in the trachea which impeded breathing, and a hoarse cry, which indicated swelling of the mucous membrane of the larynx: the child was, besides, restless and fractious; had been suffering from a somewhat severe diarrhœa, and was still relaxed in its bowels; at the angles of the eyes, nose, and mouth, the mucous membrane and skin were excoriated, and poured out an acrid secretion; and there were similar excoriations on the lips, which had produced a tende state of the nipples of the mother.

In hereditary syphilis, Mr. Hutchinson has pointed out certain appearances of the physiognomy, and certain alterations of the teeth eyeballs, and bones, which may be taken as pathognomonic of th disease. "Our most valuable aids," he observes, "are the evidence of past disease, more especially of the inflammations which may hav occurred in infancy. A sunken bridge of nose caused by the lon continued swelling of the nasal mucous membrane when the bone were soft, a skin marked by little pits and linear scars, especiall near the angles of the mouth, the relics of an ulcerating eruption; an a protuberant forehead, consequent upon infantile arachnitis, ar among the points which go to make up what we recognize as a heredito-syphilitic physiognomy. Added to them, we have very valuable aid furnished by the shape of the incisor teeth. In these patients, it is very common to find all the permanent incisor teeth dwarfed and malformed; sometimes the canines are affected also. These teeth are narrow and rounded and peg-like; their edges are jagged and notched. Owing to their smallness, their sides do not touch, and interspaces are left. It is, however, the upper central incisors which are the most reliable for purposes of diagnosis." "The characteristic malformation of the upper central incisors consists in a dwarfing of the tooth which is usually both narrow and short, and in the atrophy of the middle lobe. This atrophy leaves a single broad notch (vertical) in the edge of the tooth, and sometimes from this notch a shallow furrow passes upwards on both anterior and posterior surface nearly to the gum. This notching is usually symmetrical." "In addition to the peculiarities of physiognomy and the malformation of the teeth, the diagnosis may be much helped by observing the state of the eyes and of the bones. If there be evidence of past iritis, or if there be clouds in the substance of the corneæ, the results of past keratitis, or especially if the corneæ be now attacked by this peculiar inflammation in its acute stage, very valuable evidence will have been obtained." "In a few cases, the existence of nodes on various long bones may help us to a diagnosis, and in others we may obtain aid from finding that the patient has become deaf without otorrhœa, or that he is partially amaurotic from chloroiditis."[1]

---

[1] A good example of this eruption will be found among the portraits of diseases the skin, Plate XVIII. A W.

DIAGNOSIS.—The detection of the syphilodermata is founded on the appearance of the eruption and the concomitant constitutional symptoms. The redness of the eruption is peculiar, a brownish or yellowish-red, a tint of color different from ordinary inflammation, and commonly designated by the vague expression "copper-color." The general complexion of the skin is dirty or muddy, and sometimes yellowish or greenish-brown. Then there is congestion of the fauces, sometimes ulceration of the tonsils, depression of spirits, profuse and fetid sweats at night, anæmic conjunctiva; oftentimes pain, sometimes neuralgic, and sometimes rheumatismal; occasionally affection of the eyeball, iris, cornea, or retina, and sometimes periostitis and nodes. The presence of all these signs and symptoms together would tend to decide the nature of the disease authoritatively; but they observe much irregularity, and some may be absent; hence the diagnosis of syphilitic eruptions offers considerable difficulty, and particularly, as we have already seen, from being identical in type with other eruptions of the skin.

Syphilitic roseola is very like common roseola; in both there is congestion of fauces and a muddy complexion of the skin, and both are attended with moderate febrile symptoms; but in syphilitic roseola there is usually ulceration of the tonsils, which is absent in common roseola. The diagnosis, therefore, requires the corroboration to be derived from a knowledge of the pre-existence of syphilitic disease.

---

[1] Constitutional Syphilis, in Reynold's System of Medicine, 1866.

This observation applies to the punctated and corymbous variety of the eruption, and also to the annulate kind. But the roseola maculosa presents the character of the syphilodermata in a more decided form; the redness is more characteristic, and it leaves behind it well-marked brown stains upon the skin.

Syphiloderma papulosum may be mistaken for eczema papulosum or lichen; but the papulæ are generally larger and softer to the touch than in the latter complaints: they are frequently corymbous, and there is an absence of pruritus. When to these differences are added, the congested fauces and ulcerated tonsils and one or other of the constitutional symptoms of syphilis already indicated, there can no longer be any doubt. It may be well to note in this place that pruritus is a very important sign of difference between syphilitic and other eruptions, and as a general rule is absent in syphilis.

Syphiloderma tuberculosum may be a mere exaggeration in size of the papulæ of syphiloderma papulosum, in which case it is unlike every other eruption of the skin, or the tubercles may be large, and either prominent or flat, and suggest the idea of alphos. Indeed, as we have seen, one form of tuberculous syphilis has been termed lepra syphilitica and psoriasis syphilitica, a barbarous nomenclature, but sufficient to show the near approach in resemblance between the syphilitic eruption and alphos. The form in question grows by the circumference, like alphos circinatus, while it subsides and perhaps heals in the centre, and the prominent circumferential ridge produces and casts off a succession of epidermic scales. When, however, ulceration manifests itself in the tubercles, all relation to alphos ceases, for the latter never ulcerates, although it may sometimes crack and bleed. The ulcerating forms of syphilitic tubercle bear some resemblance to lupus, both the non-exedent and the exedent variety; and this resemblance has been indicated by the old term herpes exedens, applied indiscriminately to both. To distinguish between ulcerating tubercular syphilis and lupus, we must bear in mind the special characters of the respective diseases.

Syphiloderma vesiculosum vel bullosum reminds us of pemphigus; but the bullæ are smaller, and their contents soon become purulent; their base commonly ulcerates, and the secretions dry up into the black, thick, and rugged crusts of rupia simplex, or the conical or oyster shell-figured crusts of rupia prominens. The base of the bulla of pemphigus rarely ulcerates.

Syphiloderma pustulosum is altogether unlike impetigo, although it may be mistaken for ecthyma; but the hardened and inflamed base of ecthyma is absent, while the disposition to ulceration is greater.

Syphiloderma ulcerosum is either superficial or deep in the corrosion of the skin; both produce crusts from the desiccation of a morbid secretion; the former is extremely sensitive, but the latter, although more extensive, is less tender and painful, and is commonly associated with cachexia. As already observed, the superficially ulcerating forms of tubercular syphiloderma may be mistaken for lupus, and particularly that variety which has been named herpes serpiginosus; the common synonym of lupus being herpes exedens.

Squamous syphiloderma, as it occurs on the palm of the hands and ole of the feet, is commonly termed psoriasis palmaris et plantaris, nd is confounded with true psoriasis, or eczema palmare. The diag- osis is often difficult, as syphiloderma palmare belongs to the tertiary s well as to the secondary period of syphilis, and all the other symp- oms of syphilis may be absent. Our inquiry should rather take the irection of determining whether the disease may not be of eczemat- us origin, by a search for concurrent symptoms. In syphiloderma almare we must remember the excentric growth of the eruption, and he frequent presence of a raised margin all around, or at some point f the circumference.

Syphiloderma infantile is so unlike all other affections to which the kin of infants is liable, that it can hardly be mistaken for anything lse; and then the state of the mouth, the nose, the eyes, and the nus, is pathognomonic of infantile syphilis.

Cause.—The cause of syphiloderma is a specific poison, and its peration upon the skin probably associated with the function of elimi- ation. Its admission into the system is effected by absorption through he tissues of the skin, and without the necessary presence of abrasion; nd it may exist in a state of solution in the mucous secretions as ell as in the pus of an ulcer. Having entered the tissues for a cer- ain depth, it may react on the surface, and produce the local lesion ermed *primary* disease; or, like other poisons, it may pass directly nto the blood, and saturate the entire system, producing a constitu- ional affection commonly termed *secondary* disease. And, in the next lace, it may abide in the system in a latent form for a number of ears, and manifest its presence from time to time by partial erup- ions, as we see illustrated in *tertiary* syphilis.

These are some of the phenomena of this remarkable poison; but it as many others. Like the vaccine poison, it is chastened and miti- ated by its continuance in the human system, and year after year ecomes weaker in its influence, until its power upon the individual s entirely lost. It may remain still communicable to another person; but, in its modified state, produces only a modified disease: hence nother source of variety of syphilodermata. They are not only modi- fied in the individual by the long residence and naturalization of the irus, but they are modified also by their origin from a modified or econdary poison, in lieu of a primary poison.

Similar modifications also take place in the transmission of the poi- on, primary or secondary, from the father to the mother, and from he mother to the offspring: or, as is believed by some, from the father o the ovum, and from the ovum to the mother. In spite, however, of he modifications which take place in the power of the virus, the ovum s commonly blighted by its reception, and abortion ensues.

The syphilitic virus has all the sensitiveness of vaccine lymph, and s, doubtless, as much influenced by the age and purity of the secre- ion, which serves as its medium, as it is by the constitution of the ecipient. A concentrated virus may be expected to produce a more owerful result than one which is weakened by dilution, and one hich has already existed for some time in the system and has become assimilated, may be supposed to be milder in its effects than one that is quite recent. The belief seems to be gradually gaining ground that a perfect inoculation serves as a protection to the individual as complete as a perfect vaccination operates against the repetition of small-pox. And the practice of syphilization has proved to us that the syphilitic virus may be repeated on the same individual until his tissues refuse any longer to be excited by it; and he is, doubtless, placed in the condition of being insusceptible to the operation of the poison in whatever way it may be presented. In estimating the protective power of the syphilitic virus, we must bear in mind the observation of Marson, that quantity of inoculation is one of the necessary conditions of success. The lymph must not only be pure, and taken from the vesicle at the proper period of development, but a quantity sufficient to produce at least four complete vesicles must be introduced into the tissues of the vaccinated person.

With a pure syphilitic virus, we should expect as a result a hard chancre, indisposed to spread superficially or suppurate, and an active constitutional exanthematous fever. But in an impure or diluted state, the results would be very different; possibly, a superficial sore, soft, suppurating and spreading; an absence of subsequent constitutional exanthematous fever, and an irregular contamination of the system. Marson has shown that an imperfect vaccination, while it is wholly unprotective of the constitution, operates powerfully as an obstacle to a perfect subsequent vaccination. The same phenomena may possibly present themselves in syphilis; an inoculation takes place from which nothing but local results follow; subsequently another inoculation takes place, but the results are imperfect; incomplete in the local processes and equally incomplete in the constitutional phenomena. It therefore happens that a variety of circumstances may modify the syphilitic poison; and these modifications must necessarily give rise to a considerable variety of results, both in respect of the primary or local and the general or constitutional disease. Under these circumstances, the individual remains for ever unprotected; he may be the subject of a spurious disease over and over again, and still be as liable to receive contagion at the last as at the first. In a case of this kind, we see at once in what manner syphilization might operate as a protection and a cure.

PROGNOSIS.—The prognosis of syphilodermata is favorable; they are very amenable to treatment, and with the aid of judicious treatment always terminate satisfactorily. They are much more manageable than syphilis of the mucous membranes.

TREATMENT.—In the treatment of syphilodermata, we must, in the first instance, subdue the feverish symptoms which accompany the eruption, in other words, the syphilitic fever; we must remove the poison from the blood by every means in our power; and thirdly, we must support the powers of the system, to give it greater energy to eliminate the poision, and also to resist its lowering tendency. To remove the poison we have recourse to remedies which are calculated to act on the natural emunctories of the system, the bowels, liver, kidneys, and skin; and our means of support must be derived from the catalogue of tonic remedies, amongst which one of the most useful is iron.

It rarely happens that the syphilitic fever rises so high as to require the abstraction of blood; but such cases sometimes occur, and if the patient be full and strong, no inconvenience can arise from the practice. Local congestions are relieved by the bleeding; the nervous system oppressed by the weight of the poison is lightened; and the blood which remains is impressed with a different action to that of generating a morbid proliferation; namely, one of repairing its own loss. On the other hand, it must be borne in mind, that upon the general powers of the system will fall the labor of eliminating the poison, and resisting its morbid effects; hence the constitution must not be lowered, and particularly so in cities and large towns. Indeed, the power which we possess of relieving the blood through the natural emunctories is so great, that venesection is only likely to be needed in very severe cases of local congestion, as of the brain or lungs; and, even in such cases, the quantity of blood requiring to be removed will be very small. The general inflammatory excitement attendant on an outburst of the syphilitic fever is therefore to be combated by an active purge, by diuretics, and by diaphoretics. A dose of calomel and colocynth, followed by a draught of senna and sulphate of magnesia, will effect the first of these objects; and tartarized antimony, with abundance of diluent drinks, the rest. Opium is also a necessary element of the treatment, its purpose being to calm irritability and restlessness; with this object, and for the purpose of aiding the action of the mucous membranes and skin, ten grains of the compound ipecacuanha powder, at bedtime, will be found of much service.

As soon as the inflammatory excitement is allayed, it is time to begin the mercurial treatment. We are not aware that any particular form of mercurial preparation is superior to another for this purpose. We select usually the protioduret, which we prescribe in doses of half a grain to a grain, in combination with extract of lettuce, or conium, twice or three times a day. This medicine agrees with the stomach usually very well; but if it produce nausea or colic, then we either exhibit the pills less frequently, or have recourse to some other form of mercurial preparation. Where the alimentary canal evinces a decided repugnance to the presence of mercury, we may obtain its effects by means of inunction. For this purpose a drachm of the strong mercurial ointment should be gently rubbed into the inner side of the thigh and leg every night at bedtime, changing the leg each night to avoid too much irritation of the skin. In a case where it was of consequence that the inunction should not attract the attention of the patient's family, we limited the frictions to the sole and inner side of the feet with perfect success. Indeed, the inunction may be made on any part of the body that shall be most convenient to the patient.

In pursuing the mercurial treatment, it is of importance to pay attention to hygienic conditions and diet. Stimulants of all kinds, either in food or drink, are to be avoided, as is also exposure to cold and fatigue. And the intention of the treatment should never be lost sight of, namely, to increase the natural functions of the depurating or emunctory organs, the bowels, the liver, the kidneys, and the skin. The action of the mercury, and especially the functions of the kidneys and skin, are very much aided by the use of the compound decoction of sarsaparilla; the compound decoction of guaiacum; the decoction of saponaria; or the infusion of elder-flowers. We have no belief in the specific powers of sarsaparilla; but we cannot conceive a remedy better suited for the purpose of soothing the alimentary canal, and at the same time acting on the depurating organs, than the compound decoction of that root. For this purpose it must be taken largely; a pint and a half or a quart in the course of a day.

We have now the plan of treatment of syphilodermata of the *first period*, or those which depend on secondary syphilis, before us, namely, the careful avoidance of all stimulants, either mental or physical; the patient to keep his bed or his room; and to defend himself particularly from the risk of being chilled. Medicinally; if the inflammatory symptoms run high, and the powers of the system be equal to the loss, abstraction of a few ounces of blood; leeches or mustard cataplasms for local congestions; a calomel and colocynth purge, followed by a black draught, together with liquor ammoniæ citratis and tartarized antimony; or effervescent salines, with antimony; and a Dover's powder at bedtime, until the inflammatory stage is subdued. Thirdly, mercury in small doses, with the compound decoction of sarsaparilla; attention to the bowels, and an opiate, if necessary, at bedtime.

Besides this, which may be regarded as embracing the more essential points in the treatment of constitutional syphilis, there are several appliances which may be added to the general treatment, or be made to occupy a prominent position, according to the views of the surgeon or the convenience of the patient; for example, the warm bath, and vapor bath. The former of these is soothing and agreeable, and may be used daily, or even twice a-day. The latter might also be used daily; it is a powerful and important remedy, and establishes an active drain, which doubtless carries off a large share of the syphilitic poison in its stream. The vapor bath of late years, has acquired additional importance, from its having been made the chief agent of treatment of constitutional syphilis by Langston Parker. Mr. Parker raises the vapor of the bath by means of a lamp, and he also introduces beneath the cloak which surrounds the patient an oxide of mercury, furnished with a separate lamp, for the purpose of vaporizing it; hence, he observes, the patient is "exposed to the influence of three agents, heated air, common steam, and the vapor of mercury." Here, it will be seen, the treatment is made to turn upon the general emunctory property of mercury, and the special emunctory action of the skin.

In Germany, in addition to several curative processes founded on the limitation of diet, one method of treatment, which may be briefly defined as a triple combination of starving, purging, and sweating, enjoys special favor, namely, the treatment by Zittmann's decoction. This treatment is as follows: On the first day the patient takes a full dose of calomel and the resinous extract of jalap. During the next four days he drinks daily two quarts of Zittmann's decoction; one quart of the *strong* decoction; taken warm, in the morning, and one quart of the *weak*, cold, at midday. On the sixth day he repeats his calomel-and-jalap pills; and during the four succeeding days continues the decoction as before. On the eleventh day, if the patient be strong, he takes another dose of the purgative pills; if not, this is dispensed with. During the treatment the patient's diet is carefully regulated; on the days when he takes the purgative medicine he has three meals of broth; on the decoction-days he is allowed two ounces of roast-meat and two ounces of bread. He keeps his bed during the entire treatment, and at its conclusion is not permitted to quit his room for some time longer, maintaining a low diet, and drinking the decoction of the woods. If the patient be suffering under syphilitic ulcers, these are drest, simply, with lint soaked in water; and if he be weakly, he takes of Zittmann's decoction only one bottle a-day instead of two, with a view to prolong the treatment. If he be not cured at the conclusion of the treatment it is to be repeated a second time, or until he is well. This treatment has the sanction of a sound practical surgeon, whose practice we had the advantage of following for some time; Chelius, of Heidelberg.

The decoction keeps up a constant state of perspiration from the skin, increases the quantity of urine, and produces five or six watery evacuations in the course of the day. Its mode of preparation will be found in the chapter devoted to "formulæ" at the end of the volume.

After the symptoms of constitutional syphilis have fairly subsided under the influence of the mercurial treatment, nitric acid may be exhibited for two or three weeks longer, to give tone to the mucous membrane, and remove any remains of the poison which may still linger in the blood or in the tissues. The dose of the dilute nitric acid is twenty drops twice or three times a-day, in sweetened barley-water; or it may be combined with the fluid extract of sarsaparilla, as a vehicle; or, should there be any appearance of anæmia, we must restore the healthy condition of the blood by means of ferruginous remedies.

We may now suppose the first attack of constitutional fever, or secondary symptoms, to have passed away; but it does not therefore follow that the syphilitic poison is entirely banished from the blood; on the contrary, the probability is, that after the lapse of a few months a second attack will occur, and after that we may have a third, a fourth, and even more; the attacks at last becoming irregular, and putting on a new shape and new characters. We have, therefore, to consider what modification of treatment may be most suitable for these successive attacks; what change of remedies the chronic character of the syphilitic disease may require.

It is a curious fact, that as the attacks of constitutional syphilis become further removed from the original contagion, that is, as the poison becomes more and more assimilated, mercury seems to lose its influence, and other remedies acquire the control of the poison which it had previously possessed. That may not be the case with regard to the second, or even the third, outbreak of the secondary eruption; the time varies in different constitutions; but we must be prepared for the manifestation of the peculiarity sooner or later. In the second attack of constitutional disease, the protioduret of mercury will possibly be found to retain all its power; in the third the bichloride may be more efficient; in the fourth and successive attacks, the iodide of potassium. It is difficult to explain this peculiarity otherwise than by supposing that the tissues lose their susceptibility of being excited by the mercury after a number of repetitions.

In the syphilodermata of the *second period*, those forms which belong to the "tertiary syphilis" of Ricord, mercury is not only inadequate to the removal and cure of the disease, but is actually injurious, inducing irritability of system, producing new and more violent attacks of eruption, and forcing a simple tubercular eruption into a state of refractory ulceration. It is at this period that iodide of potassium takes the lead as an anti-syphilitic remedy, and its use is attended with the most satisfactory results. Sometimes it affects the cure in a short period; at others it seems to flag in its effects, and requires to be increased in dose; and it may be beneficially assisted by bitters, or in case of an anæmic state of the constitution, by the preparations of iron. We have before remarked that an useful and effective dose of the iodide of potassium in the beginning of treatment is three grains; this we may increase, if need be, to five, eight, or ten grains, or even more, than three times in the day; and, indeed, without such increase, we are liable, in cases rendered unusually rebellious by mal-treatment, and especially by the abuse of mercury, to fail, altogether, and attribute to the remedy what is properly due to our own mismanagement. The iodide of potassium is the remedy best suited to those chronic forms of tuberculous eruption which we have distinguished as tubercula circumscripta, and it is especially indicated in the ulcerating tubercles, and those deeply-seated disorganizations of the skin and subcutaneous tissues which have received the name of "gummata."

We have already observed that in those chronic syphilodermata where mercury ceases to exert a beneficial influence; where mercury is not merely negative in its effects, but obviously and plainly excites an irritable and destructive action both on the system at large and upon the local disease; our great remedial agent is iodide of potassium, and this medicine frequently acts as a charm in such instances. We have in our mind at this moment the case of a gentleman, who one morning staggered feebly into our consulting room, supported by his physician and ordinary medical attendant. He introduced himself as a lost and hopeless man; and he certainly presented a vivid picture of exhaustion and decay. He showed us several large, deep, and foul ulcers upon his legs, and he said that the surgeons of eminence whom he had consulted, even a few days before his visit to us, would insist upon his taking mercury, which he knew was destroying him. We prescribed for him the iodide of potassium; and in less than three months he called upon us, having just returned from the country, declaring that he never felt stronger or better in his life.

We should have been very sorry to have mentioned this case, if we thought it could, by any possibility, be used as an argument against mercury. Mercury is an invaluable medicine, but one requiring to be used with judgment; to be watched in its effects, and to be regulated according to those effects rather than upon any scheme of theoretical results; indeed, mercury, like iodide of potassium, and every other medicine, must be exactly graduated, in dose, combination, and period of administration, to the special case of the patient. Each patient, as he varies in physiognomy from his foregoers, varies also in constitution, in the characters of his disease, and in his susceptibility to the influence of medicine.

The iodide of potassium seems to act, generally, upon all the tissues of the body, in a remarkably short space of time, and especially on the kidneys. Its combination with the compound decoction of sarsaparilla facilitates its action, notably increasing its diuretic properties, and supplying a convenient vehicle with which the poison may be excreted by the mucous membranes and by the skin.

After iodine has been taken for a time, it begins to excite an over-action in the various tissues of the body; firstly, in the mucous membrane; then in the nervous system and brain; and these actions may be regarded as evincing the poisonous properties of the medicine. The symptoms now referred to are first perceived in the mucous membranes, and especially in that of the fauces, the nose, and the eyes. All that is necessary, therefore, is to watch for these symptoms, and, if it be thought desirable, as soon as they occur, the use of the remedy should be suspended, or the dose reduced. In this way we are enabled to put an immediate stop to the continuation of the morbid effects. When iodine begins to act as an irritant to the system, there is a feeling of stiffness and dryness in the throat; more or less coryza; and an uncomfortable feeling with increased secretion from the nose; sometimes tenderness of the salivary glands and salivation. By degrees the congestion extends to the trachea and bronchial tubes, adding cough and bronchitis to the other symptoms. These indications of irritation of the mucous membrane generally precede those of disturbance of the nervous system, and give sufficient warning of a necessity for putting a stop to the use of the medicine. When the iodine has been carried further, the patients complain of dimness of sight, giddiness, and pain in the head; and in one patient we saw severe palpitations of the heart. But, although we have used the medicine extensively, we have seen very little of its morbid effects, probably from always exhibiting it with caution.

Our mode of administering the iodide of potassium, is to prescribe five grains twice or three times a day, according to the power or constitution of the patient. If we begin with five grains three times a day, we increase the dose during the second week to seven grains and a half; and to ten grains during the third week; always impressing on the patient that if any disagreeable effects be produced by the medicine he is to stop it immediately, and as soon as the disagreeable symptoms have subsided, begin it again, but in a less dose. If the cessation should continue for a week, we require that the dose for recommencement should be that first prescribed. In this way we get the full effects of the medicine rapidly, and avoid the risk of any mischievous effects from its use. We were first led to adopt this mode of employing the iodide of potassium from meeting with cases in which the medicine had been continued for many months at the same dose, and had lost its effect on the constitution of the patient completely; and subsequent experience has led us to believe that as much and more effect may be produced, by this mode of administration in three weeks, than can be obtained by the unvarying dose in as many months; indeed, after a time, the remedy without increase of dose becomes utterly useless. Sometimes we find it convenient to continue the five grain dose for a longer period than a week, and the same with the others; we endeavor to ascertain the period during which the action of the medicine is progressive, and have the dose increased immediately that period is passed. Occasionally, we may find it desirable to make a change in the remedy, in which case we may have recourse to the bromide of potassium or iodide of ammonium; the dose of the former being similar to that of the iodide of potassium, that of the latter being somewhat less as being a more powerful preparation.

Syphilitic eruptions of the skin, when general, require no other *local treatment* than the occasional use of the tepid soap-bath. When situated on the face, the diluted citrine ointment, or the nitric-oxide-of-mercury ointment, applied with gentle friction, are good remedies and tend to hasten the dispersion of the hyperæmia, the absorption of the pimples and tubercles, and the removal of the stains which they leave behind them.

When tubercles pass into a state of ulceration, these ointments are still of much service as gentle stimulants; but when a more soothing remedy is required, or when we merely desire to protect the ulcer from the influence of the atmosphere, we may have recourse to the benzoated ointment of oxide of zinc, either by itself, or in combination with a few grains of camphor, or a few drops of liquor plumbi diacetatis.

For sloughing sores, an opiate lotion and water-dressing answer the purpose well, and if the ulcers be indisposed to heal, the black wash and yellow wash, either with or without opium. In these cases, and particularly in phagedænic sores, a lotion of chloride of zinc will be found to be of excellent service; a medium strength is one drachm to the half pint, but this can be increased or diminished, according to its effects, and particularly in reference to the degree of pain which it may occasion.

Of course the local treatment is quite secondary to that of the general system; but we have succeeded beyond our expectation, in several instances, in causing the removal of local tubercular masses in a state of ulceration, by frictions with the mercurial ointment, and the application of a mercurial plaster.

It is remarkable how very soon the *fall of the hair*, which accompanies syphilis, is checked by means of the remedies employed for the relief of the other symptoms; the mercurial preparations or the compounds of mercury with iodine. The plan of treatment is, therefore simple and obvious. Occasionally, however, alopecia is the only evident symptom of the presence of the syphilitic poison in the blood, in which case we should hardly be warranted in subjecting our patient to a mercurial course. Under such circumstances we have found the iodide of potassium, in three-grain doses, three times a day, or five grains twice a day, answer every purpose; continuing the treatment, in augmenting doses, for a medium period of six weeks, unless symptoms of iodic irritation arise.

The best local application for alopecia is a pomatum, consisting of one part of the nitric-oxide of mercury ointment, to three of scented pomatum. This should be well rubbed into the roots of the hair at bedtime each night, and a proper degree of action maintained in the scalp, by means of plentiful friction with the hair-brush. As an aid to the stimulant excitation of the skin, the ammoniated hair-lotion,[1] introduced among the roots of the hair by means of a sponge, may be used in the morning before brushing. This lotion, besides aiding in the excitation of the scalp, assists in removing the scurf which is apt to form upon the sordid skin of persons affected with constitutional syphilis, and affords great comfort to the patient; and it not only checks the fall of the hair, but aids in its reproduction where it has already fallen.

The *chronic affections of the nails*, attended with dryness and imperfect formation, come into the same category with the erythematous affections of the palm of the hands and sole of the feet, and their treatment is mercurial; either the protioduret or the bichloride. It is remarkable how rapidly chronic erythemata of the hands and feet, attended with desiccation, cracking, and exfoliation of the cuticle, and depending on syphilis, give way to the action of either of the above preparations, in alterative doses. In three weeks the misery of years may frequently be cured, after every other remedy and mode of treatment had been tried in vain. Medical men suffering from this complaint have been startled at our audacity, when we have promised them a cure, in three weeks, of that which had baffled themselves for months, and more frequently for years; but our promise has rarely failed to be accomplished.

We must mention, however, that these erythematous disorders are apt to return from time to time; but the remedy may be repeated as often as they appear, and in the end will prove triumphant. We do not believe that any good results from continuing the medicine for many days beyond the period of cure; we direct that it should be left off at the end of a week, after the skin is healed; and prefer, in case of relapse, to resume the remedy as before.

For the local treatment of these erythemata, the camphor cerate is the best application, or the benzoated ointment of oxide of zinc with honey or spirit of camphor. In either case the proportion is a drachm to the ounce. An ointment containing a drachm of glycerine to the ounce of benzoated lard is a good application; or a lotion containing one part of glycerine to three of camphor mixture or rosewater; or better still the amylated glycerine.

---

[1] *Vide*, Selected Prescriptions.

The purpose of these local remedies is simply to keep the skin moist; and great comfort is sometimes obtained by sleeping with a water dressing on the parts; while a cure is to be looked for from the internal remedies alone.

ONYCHIA and the painful granulating sores which sometimes form under and around the nails, also derive their cure from the constitutional treatment; but they at the same time require some local management. When in an inflamed state, water-dressing, with Alison's prepared lamb-skin, or a solution of opium in place of simple water; when less painful, a weak solution of chloride of zinc, or acetate of lead, are the proper remedies. Sometimes the zinc ointment, or benzoated lard with camphor, or an ointment of Peruvian balsam, answer better than the lotions; and in two or three instances we have obtained the best results from covering the granulations with powder of charcoal or Peruvian bark.

MUCOUS TUBERCLE, like other forms of syphilitic tubercle, obeys the will of the internal remedies employed against the manifestation of the syphilitic poison in the skin. It would get well without any external application; but sometimes we may be required to treat it locally, when the nitrate of silver, the oxide of zinc ointment, or a lotion of chloride of zinc, or alum, or the black or yellow wash, will be found the best suited to our purpose. The region in which they occur should be kept thoroughly washed with the juniper-tar soap, or carbolic acid soap; and, after drying the tubercles well, it has been recommended to powder them with calomel.

For INFANTILE SYPHILIS the treatment must consist of mercury; and the best remedies in every respect, according to our experience, are the bichloride, calomel, or hydrargyrum cum cretâ, which may be administered either to mother or child, or to both, according to the judgment of the surgeon. If the mother evince symptoms of constitutional syphilis, it may be sufficient to exhibit the mercury to her alone, the infant drawing its nourishment from her breast being regarded as part of herself. If the proportion of mercury thus conveyed to the infant be deemed insufficient, there can be no objection to give it independently to the latter. And in several instances we have given it to the infant only. We have not, in this case, for an instant imagined that the mother was free from the poison, but only that her tissues were so far accustomed to its presence, that it was incapable of setting up any morbid action, at least so long as she continued to suckle, and the milk performed the office of an emunctory current; and we were quite prepared, should any retardation in the cure of the infant occur, to exhibit the remedy to the mother also. In a word, we consider the safest practice in these cases to be, to give mercury to the mother as well as to the infant; taking care to moderate the dose to such a degree as not to check or injure the secretion of milk.

We have heard it suggested that the infant may be affected with syphilis in the womb of its mother without the latter being contaminated, and that contamination of the mother may subsequently occur

quence of transmission of the poison from the diseased child
ssues of the parent. Such a theory we consider to be most
ophical; it is easy to comprehend that, in the instance of
c contagion, the child may be the seat of manifestation of the
just as in a male the disease may fix upon one spot or one
f the entire body; indeed, not merely because the fœtus
ch circumstances is a part of the whole, but because it is also
f more recent formation, a new organ, and made up of new
ull of germinal life, which we may conceive to be more sus-
of receiving, and more easily influenced by, a morbid poison.
perfectly consistent with physiological laws, that the fœtus
ecome the focus of excessive accumulation of the poison, the
y react upon the parent with such force as to cause a mani-
of the presence of the poison in her tissues as well. The
, therefore, resolves itself simply into one of latency and
ment.

ose of the bichloride to the mother under the above circum-
hould be one-sixteenth of a grain, in combination with syrup
ies and tincture of bark, or the compound fluid extract of
illa, three times a-day; and to the infant, one twenty-fourth
in in syrup of poppies and dill-water.

cal treatment for excoriations around the nose and mouth of
t is the benzoated ointment of oxide of zinc, or an ointment
d of a drachm of the unguentum hydrargyri nitratis to the
benzoated lard. The latter is especially applicable to exco-
in the neighborhood of the eyelids. For cracks upon the
d feet, and for excoriations around the pudendum and anus,
oated ointment of oxide of zinc is also the proper application;
etions in these parts may be absorbed by the oxide of zinc
or fuller's earth. For discharges from the meatus of the ears
l water is the best remedy.

DITARY SYPHILIS.—After the age of infancy, congenital sy-
radually merges into what may be termed hereditary syphilis.
ntile syphilis gets well, but several months or years afterwards
break out again. Sometimes, however, the patient has been
n any indications of syphilis in his infantile age, the first
ations of its presence in the system being delayed to the
f advanced childhood, puberty, or even adult life. This more
constitutes hereditary syphilis. The kind of syphilitic dis-
under consideration, in its more recent forms, yields without
ifficulty to the bichloride of mercury; when more advanced,
de of potassium is an useful auxiliary; and, in a more distant
the combinations of iodine, mercury, and arsenic, and cod-
, become valuable remedies. We have had little experience
ydrochloride of gold, but we apprehend that it is to the pre-
n of syphilis that it would be especially applicable.

of the forms of hereditary syphilis are remarkable for extreme
y, refusing the slightest obedience to medical agents, and
ing their course unimpeded. These cases are only to be
l by opposing obstinacy to obstinacy, by following them up

with appropriate remedies, that is, with remedies directed upon a proper principle, when even the most enduring will be found to yield at last. In pursuing this course, it is evident that we must seek to obtain a gentle and continuous influence over the system, such as that by which Nature conducts her operations; we give expression to our meaning by the term "alterative;" our process should be essentially alterative; large doses of medicine and heroic action are only calculated to exhaust the powers and do mischief. In making these observations, we have now in our memory several persevering "incurables," who, by a steady continuance of remedies for periods varying between one year and four, are fast approaching cure. And, in another point of view, these observations are not without their value; the patient frequently tires, the surgeon despairs; in both instances, because an unwarrantable expectation has been created; but if, from the first, the difficulty be appreciated, both move onward with more comfort, and with less prospect of disappointment. The surgeon is no longer incited to make a bold effort, which cannot but end unhappily, and the patient takes no step to urge him to such an attempt by impatient suggestions.

In some instances of the lupoid tubercle we have found the iodide of potassium a serviceable remedy; in others, the bichloride of mercury has proved most useful. Sometimes the iodide of iron has brought about a healthy condition of the general system, which has been followed by improvement in the local disease; and, at other times, we have derived the best results from the triple solution of mercury, iodine, and arsenic, given alone, or in conjunction with cod-liver oil. When the arsenic, in the triple compound, has appeared to be objectionable, we have had recourse to the tonic properties of quinine as an adjunct to the iodide of mercury, and with a very satisfactory result. The following formula is an excellent substitute for Donovan's solution, agreeing well with the stomach, and possessing the advantage of being in a more condensed and convenient shape for deglutition:—

℞.—Hydrargyri biniodidi, gr. ¼.
Quinæ iodidi, gr. j.
Micæ panis, gr. j.
Mucilaginis, q. s.

In these very obstinate cases it is important to remember, that when the remedies disagree with the patient, or seem to cease to exert a beneficial action, they should be immediately suspended, and resumed after such an interval of time as may seem good in the judgment of the surgeon. Like food and hygienic conditions, medicines, which are very beneficial at one moment, lose their power after a time, and then require to be changed or modified, either in form or quantity, until the appetite for them returns. This is a very necessary rule to be borne in mind in the management of so obstinate a class of diseases as those of the skin.

CHAPTER XIX.

LEPROUS AFFECTIONS.

LEPRA, THE LEPROSY, is a term employed by the ancient Greeks to distinguish a roughness or scaliness; a state of leprosity of the skin. The most complete example of scaliness known in modern times, and possibly also in ancient times, is remarkable for the *whiteness* of its scales; hence the recognition of color as an element of classification; the disease in question became a scaly whiteness, or in technical language, a lepra alphos; and the whiteness served to distinguish it from a black lepra, lepra melas; and from a shining white or glossy lepra, lepra leuce.

The Latins set forth another feature of leprosy, a spotted character, the skin being spotted like that of a vitulus or calf; hence their term vitiligo; the white vitiligo, the black vitiligo, and the shining white or glossy vitiligo; vitiligo albida, nigricans and candida; or in the language of Celsus, vitiligo alphos, vitiligo melas, and vitilgo leuce.

But the Greeks were not long in discovering that the lepra melas, besides simple discoloration, manifested a thickening of the skin, and they very readily adopted a symbol suggested by the name of a disease prevalent among the Arabians, and described by the Arabian physicians as the *dal fil*, the elephant disease. It is true that the dal fil was an affection totally different from lepra, namely, the boucnemia of the present day; but the comparison between the thickened skin[1] of lepra melas and the hide of the elephant was sufficiently apposite to warrant the application of the term elephantiasis to this disease.

But elephantiasis by degrees acquired another signification; it not only expressed the thickening and discoloration of the skin, rendering the integument similar to that of the elephant; but it also indicated a more grave and serious disease, one which was not simply limited to the surface like lepra alphos, but was constitutional as well as local. Therefore, looking only at the surface, the Greek physician might pronounce the case to be a lepra, a lepra alphos, a lepra melas, or a lepra leuce; but looking deeper than the surface, he would proclaim the lepra melas and the lepra leuce to be an elephantiasis.

We have an illustration of this mode of viewing the disease in the writings of Celsus, who not only distinguishes between the local signs comprised in his genus vitiligo; but, at the same time, transfers the constitutional disorder accompanying vitiligo melas and leuce to a different chapter of his work. In his third book, on the treatment of diseases by diet, chapter 25, he gives the following admirable outline of this affection: "The disease which the Greeks call elephantiasis is almost unknown in Italy, although very common in other regions of the world. The entire body is attacked, even to the bones. The surface of the body is thickly studded with maculæ and tubercles, at first red, then becoming brown; the skin is remarkable for inequalities, in some parts thickened, in others thinner than natural; in some, hard; in others, soft; in many parts rugged, and apparently coated with scales. The body is emaciated; the bones, the calves of the legs, and the feet, swollen. When the disease is of long standing, the fingers and toes become lost in the swelling; feverish symptoms are developed, and the patient sinks overwhelmed with suffering." But for the local signs of the disease we must go to the fifth Book, on the treatment of disease by medicine, chapter 28, where, under the head of vitiligo, he observes: "There are three kinds of the affection.

---

[1] "In most places the true skin was not less than a quarter of an inch thick."—eport of post-mortem examination of a case of elephantiasis Græcorum, by Dr. John avy, M. D., F. R. S.

"It is called *alphos* when it is white, rough, and dispersed, resembling drops sprinkled on the skin; the spots having sometimes greater breadth than mere drops; and from time to time enlarging their dimensions." *Melas* "differs from alphos in possessing a deeper tint of color, as though of a shadow thrown upon the spots; in other respects it is the same." *Leuce*, "at the first glance, somewhat resembles alphos; but is whiter, and implicates the skin more deeply; the hairs growing on the part are white, and are like down."

"All these affections spread; some quickly, some slowly. Alphos and melas occur at all periods of the year, and terminate with equal irregularity. Leuce is difficult of removal. The former two admit of cure without much trouble, the latter (leuce) rarely ever gets well; for if a part of the disease disappear, the entire skin never returns to a healthy color. But whether a given example of the disease be or be not curable, is easily tested by experiment. For, if the skin be punctured or pricked with a needle, and blood flow, as it commonly does in the two former, there is hope of a remedy; but if there issue a colorless humor, the case is incurable. Therefore, we may abstain from treating the latter." No reference is made to any constitutional disturbance accompanying these symbols of disease; but it would be unreasonable to suppose that there was an absence of general disorder. We use the words symbols of disease, for the reason, that although lepra alphos is a substantive disease, melas and leuce are not so, but merely signs of lepra or elephantiasis; excepting, perhaps, so much of idiopathic melasma as may be erroneously mixed up with the description of melas; and so much of common leucasmos as may equally erroneously be confounded with leuce.

The Arabian physicians distinguished lepra by the word *juzam;* and in addition, they had amongst them the dal fil, or elephant disease, the elephanta. Hence, in the Greek literature, there came to be two diseases bearing the name elephantiasis; the one being their own lepra melas and leuce, the elephantiasis Græcorum, the juzam of the Arabians; the other, the dal fil of the Arabians, or elephantiasis Arabum.

Reviewing these terms with reference to their signification as applied to the known character of the diseases which they represent, we may express that signification as follows: *lepra*, roughness and desquamation; *alphos*, *melas*, *leuce*, and *vitiligo*, color, and distribution of color; *elephantiasis*, pathological structure and universality of morbid contamination; *juzam*, mutilation; and *dal fil*, bulk and texture.

We may now inquire in what respect the leprosy of the Hebrews corresponds with the leprosy of the Arabs and of the Greeks. The Hebrew terms assigned to that disease have especial reference to color and smoothness; and, like the alphos, the melas, and the leuce, are limited to superficial appearance. The distinctive Hebrew title of leprosy is Berat, signifying a bright spot; and, of the berat, there are three varieties, the boak, or dull white spot, corresponding with the lepra alphos of the Greeks; the berat cecha, or dark spot, agreeing with the lepra melas; and the berat lebena, bright or glossy white spot, or lepra leuce.

The lepra melas and lepra leuce have an existence at the present day in a disease sufficiently well known to us, and pretty extensively distributed over the world's surface, the elephantiasis Græcorum; and these characters are so distinct as to have suggested terms still in common use, namely, the black and the white leprosy; and, as there is good reason for believing that the lepra melas and lepra leuce are identical with the tsorat of the Hebrews, namely, the berat cecha and the berat lebena, we are warranted, as we believe, in coming to the conclusion, that elephantiasis, lepra melas et leuce, and tsorat, are one and the same identical disease. In no other disease known at the present day are the peculiar black and white spots, described in the Book of Leviticus, present; and we are further led to believe that the disease is the same, from the importance which is attached to it in the sacred writings, and the proclamation therein of its contagious nature.

In handling this question, we take the only facts that are presented to us; and especially that pathognomonic sign of the disease, the glossy white spot upon which the hairs are fallen; or, if they remain, are changed to white. Celsus lays before us little else than change of color, and drives us to an earlier page to study the constitutional symptoms of the disease. The book of Moses professes no medical dissertation; it simply points to signs; and those signs, we venture to affirm, exist as unmistakably on the body of the leper at the present day as they did when the written law of Leviticus was proclaimed. Not only is there the white spot, but there is indicated also the atrophy of the skin, the spreading character of the disease, and its tendency to ulceration. To our mind, the identity of elephantiasis Græcorum and the leprosy of the Hebrews, if indeed the latter be not, as imagined by certain divines, a mere symbol of moral disease or sin, is a fact which cannot admit of the slightest doubt.

Assuming, therefore, the elephantiasis or lepra Græcorum to be the same with the leprosy of the Hebrews, it is also the juzam, or leprosy of the Arabians, the leprosy of the middle ages, the leprosy of the crusades, and the elephantiasis and vitiligo of the Latins. It is a disease of great interest, on account of its early existence and almost universal distribution throughout the world, its extreme severity, its spontaneous disappearance in countries where it had prevailed as an epidemic, and its persistence in others with all its original and historical characters, up to the present time. We read of it in the Bible, as prevailing amongst the Jews during their residence in Egypt, and after their exodus into Judea; and in the New Testament, as still afflicting them in the time of Christ. We trace it from Syria into Persia, Hindostan, China, Japan, Australia, New Zealand, Africa, Turkey, Greece, Italy, France, Spain, Britain, Germany, Russia, Scandinavia, and America. Besides being so widely distributed, we find it rising and declining at different periods in different parts of the world, moving gradually from the East to the West, and from the South towards the North. Probably limited in the early periods of the world to Egypt[1] and the East, and confined to that region at the commencement of the Christian era, the disease spread rapidly through Greece and the south of Europe during the period ranging from the second to the seventh century, reached its culminating point during the Crusades of the eleventh and twelfth century, and began to decline from the fifteenth to the seventeenth century.

The earliest records of the leprosy in Great Britain are those of the Welsh king, Hoel Dha, in the year 950; and from that date until the beginning of the sixteenth century, the disease was common in England; and there is evidence also of its existence in Ireland. The Leper Hospital of Hugh Pudsey, at Sherburn, in Durham, was founded between 1180 and 1183, for the maintenance of sixty-five lepers; whereas in 1434 the foundation was reduced to fifteen persons, of which two should be lepers, "if such can be found;" and, in 1585, by Act of Elizabeth, there being no lepers, the foundation was extended to thirty brethren, old, blind, and lame, and otherwise impotent. At Bodmin, in Cornwall, a seal is preserved of the Hospital of St. Laurence de Ponteboy, which bears evidence of being engraved in the latter part of the fifteenth century. "This seal shows that the hospital existed as an ecclesiastical foundation for some time anterior to the Reformation, and perhaps for a hundred years or more before its Elizabethan incorporation."[2] And it is satisfactory to know that the revenues of the hospital are at present enjoyed by the Cornwall Infirmary at Truro, the governors of that institution having bound themselves, in 1810, to receive leper patients. During the reign of Edward the Sixth, 1547 to 1553, it is reported by a commission for suppressing colleges, hospitals, &c., that most of the Lazar-houses in England were empty. In Scotland, leprosy appeared one or two centuries later, the earliest Lazar-houses dating back to about 1150, and the disease was still traceable during the 17th century; in 1604, a leprous woman was ordered into the Lazar-house at Aberdeen, and a notice of the same date exists of the presence of patients in the hospital at Kingscase, near Ayr. Symptoms of decline of the disease in Scotland are perceived in an order for dismantling the Lazar-house at Greenside, Edinburgh, in 1652; but in the islands to the north of Scotland, the Orkneys, Shetland, and Faröe islands, the malady was in full activity. Towards the middle of the eighteenth century, namely, in 1742, leprosy was supposed to have disappeared in the Shetland islands, and a public thanksgiving was ordered to commemorate the event; but instances still presented themselves occasionally, as is shown in the account of the parish of Northmaven, given by Mr. Jack, in 1798; and by the more homely instance of a man named John Berns, who, in 1798, was a patient in the Edinburgh infirmary. This man was a native of Shetland, and a direct descendant from leprous ancestors.[1]

---

[1] "High up the Nile, 'mid Egypt's central plains,
Springs the dread Leprosy and there alone."
Lucretius De Naturâ Rerum. Poetical version by
John Mason Good, M.D.

[2] Professor C. C. Babington, in Archæologia Cambrensis, for July, 1863.

But while leprosy has thus seemingly been disappearing altogether from Great Britain, there are yet many spots amongst its old haunts where it still lingers; as on the shores of the Mediterranean, both in France and Italy, as well as in Greece; on the shores of the Black Sea, where it goes by the name of *Mal de la Crimée;* on the shores of the Caspian sea; in the islands of the Indian Ocean; on the coasts of Africa, Arabia, Hindostan, and China; in Madeira; in the West Indies; in Canada; and notably in Iceland and on the coast of Norway. In Norway, the presence of leprosy has been so great and so fatal that a royal commission was appointed a few years back, to examine into the nature of the disease, and determine the course to be taken to limit its progress, and, if possible, to effect its cure. The report of this commission, by Drs. Danielssen and Böeck, was printed by the Norwegian Government in 1848; it is accompanied with a fasciculus of excellent plates, and is by far the best treatise on elephantiasis in existence.[2]

The name *elephanta* or *elephantiasis* was given to this disease by the early Greek and Roman writers; the term occurs under a poetic synonym in Lucretius, who says, "There is the disease called *elephas*, which has its rise on the river Nile, in the middle of Egypt, and in no other country."[3] Aretæus, who knew the disease well, and has left a good description of it, explains that it received its name from the resemblance of the diseased skin to that of the elephant, and particularly from its vastness and terrible nature. A similar idea gave origin to the terms *morbus herculeus* and *morbus heracleus.* Other names, such as *leontia, leontiasis; satyria,* used by Aristotle; *satyriasis, satyriasmos,* had reference to the deformity of countenance produced by the thickening, rugosity, and discoloration of the skin of the face. The heavy, lion-like brow is very remarkable; and it seems more than probable that the original idea of Satyrs was suggested to the poets by the appearance and habits of the lepers, who, driven from society, lived in holes and caves in the woods, and subsisted by robbery and violence. The latter circumstance caused them to be distinguished in Italy by the names of *malandriosi*, or brigands; *riobman*, or robbers; and *latrones* and *ladres*, thieves; thus ignoring the cause of their original expulsion from society, and confusing their actions with their sufferings. The Arabians styled the disease, *juzam*, *judam*, *juzamlyk*, *judamlyk*, *alzuzam*, *dsjuddam*, *madsjuddam*, *jeddem*, *muzdjeddem*, *didyam*, *damadyand*, *dschiddam*, *sghiddam*, *judas*, &c. It has, besides, received local names in different countries; on the shores of the Black Sea it is called *maladie de la Crimée*, *lepre de la Chersonèse*, *lepra Taurica;* and in Persia, from its supposed origin in the Crimea, *krimskaia*. In India it is named *fisanikhun khora*, *kushta* (leprosy), *mahakushta* (great leprosy), *ructa-kusta* (tubercular), *guleet-kusta* (anæsthetic), *schvet-kusta* (white leprosy), *sunbahiree* or *soubharry* (anæsthetic), *jugaru*, *jejani*, *burrabeemanee* (great sickness), *ructa-pitia* (tubercular), *ruggat-pittee*, and *mahaviadhi* (tubercular); in China, *fa-fung*, *fak-fung*, *fat-foong*, *ma-fung*, and *ta-ma-fung;* in New Zealand, *ngerengere* and *tuwhenna;* in Africa, *kohan*, *koban*, and *kokobe;* in the West Indies, *kokobay;* in Morocco, *ezdam;* in Turkey, *miskine* or *meskin;* in Constantinople, *tzaraath;* in Greece it is popularly known as the *lova;*[1] in the Ionian Islands it is recognized as the *lepra;* in Crete it is called *khalassi*,[2] *komagra*,[3] and *tzaraath;* in Dalmatia, *mal de fiume*, *falcadine*, and *scherlievo;* in Italy, *il male di san Lazaro*, *male di commochio*, *il male di fegato*, *lebbra;* in Spain, *mal rojo;* and in France, *ladrerie*. The term *mal rojo*, used in Spain, calls the attention to the dark red or reddish-brown hue of the skin; while in other countries it has been named *mal noir*, also from the dusky hue of the surface. In Britain, the old Saxon terms *seo mycle adl* (the myckle ail, or great disease), *hreof*, and *licprower* have been given to it, together with the modern appellation, the *black leprosy;* the first of these terms applies to the severity of the complaint; the terms *hreof* and *licprower* signify knotty or tubercular, the latter, found in the Northumberland dialect, evidently corresponds with the Norwegian word LIKPRA.[4] Sir James Simpson remarks that the old Scottish name for leprosy was *Liper;* the victims of the disease were called *Lipper Folke*, and a celebrated spa and place of resort for them, two miles from Edinburgh, was thence named Liberton, a corruption of *Liper Town*. The Scandinavian designation of the disease is *spedalskhed*, and in Sweden, *spetalskhan;* in Norway it is also called *arvesygen*, or hereditary disease, and *likpra*, that is, knotty or tubercular; in Denmark, besides *spedalskhed*, *likwœrthiny* and *likwœrthingsof;* and in Iceland, *holdsveiki*, *leinafalls-syki*, *likthrá* and *malaottosott*. In some parts of South America it has received as an appellation, the term *boasi*.

---

[1] Sir James Young Simpson has given an excellent and interesting account of the Leprosy in Great Britain, in a series of papers entitled, "Antiquarian Notices of Leprosy and Leper Hospitals in Scotland and England," published in the "Edinburgh Medical and Surgical Journal," for October, 1841; and January and April, 1842.

[2] Traité de la Spedalskhed, ou Elephantiasis des Grecs; par D. C. Danielssen, Médecin en chef des Hôpitaux de Spedelques à Bergen; et Wilhelm Böeck, Professeur de la Faculté de Médecine à Christiania. Paris 1848. These authors have further illustrated the disease in their "Recueil d'observations sur les maladies de la peau; troisième livraison, 1862," which is especially devoted to elephantiasis anæsthotos.

[3] De Naturâ Rerum; translated by the Rev. John Selby Watson. Lucretius was born ninety-five years before Christ.

---

[1] Λωβη, mutilation.

[2] χαλαζαειν, to have pimples or tubercles, Hippocrates.

[3] Possibly from κωμα, lethargy; αγρα, attack.

[4] Drs. Danielssen and Böeck, *loc. cit.*

ELEPHANTIASIS VEL LEPRA.

Syn. ELEPHANTIASIS *Græcorum: orientalis; legitima; alopeciata. Lepra elephantia; Græcorum; Arabum; alopeciata; medii ævi. Black and white leprosy.*

ELEPHANTIASIS TUBERCULOSA; *leontina; satyria. Lepra leontina, satyria; melas; rubra. Vitiligo melas; nigricans. Black leprosy; red leprosy; humid leprosy.*

ELEPHANTIASIS ANÆSTHETICA; *nodosa; mutilans. Lepra Hebræorum; Judæorum; leuce; articulationum; mortificans; gangrænosa; rheumatica; phlegmatica. Vitiligo leuce; candida. White leprosy; articular leprosy; joint evil; dry leprosy.*

ELEPHANTIASIS is a chronic disease, involving, especially, the skin, the mucous membranes, the nerves, and the bones; lasting for many years; seldom if ever undergoing spontaneous cure; and terminating in loss of sensation, atrophy, ulceration, and necrosis. The disease is indigenous to particular countries; is met with most abundantly in the neighborhood of great rivers, lakes, and the sea-coast; is hereditary; and possibly under certain circumstances, contagious.

In its invasion, the disease makes its attack slowly, insidiously, and imperceptibly; the first evidence of its existence is an erythematous spot, sometimes a transient febricula, followed by an exanthema. In either case, the disease has already taken possession of the blood, and has probably been present in the system for several months, possibly for one or more years. We may therefore regard this presymptomatic period as a latent stage of the affection, to be followed by an exanthema or manifestation by the skin, and subsequently by ulceration or atrophy. A careful investigation of the state of health of the patient during the latent period would probably discover an incipient cachexia, indicated by pallor, slight anæmia, yellowness and muddiness of complexion, some degree of debility, and a tendency to emaciation; but in the absence of suspicion, these slight symptoms would be unobserved; the individual seems and feels well, and similar symptoms might occur without being the forerunners of elephantiasis. Nevertheless, the symptoms above mentioned are sometimes sufficiently distinct to constitute a real state of disturbance of function; a sickening for an anticipated illness in fact, but without the direct tendency of the symptoms being discoverable. The latent stage is generally passed over without remark, but is, nevertheless, the most important period of the affection, and the only period, according to our present knowledge, at which remedies may be expected to exert a curative influence over the disease. It is the period during which the poison accumulates in the blood, and effects the morbid constitution of the sanguineous fluid.

The cutaneous development of elephantiasis has the general type of an exanthema, modified by the peculiar agencies of the disease. The exanthema makes it appearance as a congested or erythematous spot of circular figure, of a size of two to four lines in diameter, and most vascular in the centre, while it fades towards the circumference. There may be only a single spot, or the spots may be numerous; they may be isolated, or they may be aggregated in small or large clusters so as to form blotches, varying in dimensions from one to several inches in diameter. A single spot or blotch, or a partial distribution of spots or blotches, may appear upon the skin without any accompanying constitutional symptoms, or they may appear in succession until they cover the greater part of the body equally without constitutional symptoms; but a sudden and general outburst of the eruption is usually associated with a smart attack of febrile symptoms, namely, chills, succeeded by heat of the skin, thirst, lassitude, somnolency, and incapacity for exertion of every kind.

The spots and blotches of elephantiasis, at their first appearance, have a pinkish or purplish red color; after one or two weeks, the redness is deepened and assumes a brown or copper colored hue from the deposition of pigment in the rete mucosum; and still later the redness subsides, and a brownish-black or bronze-colored stain takes the place of the original red spot. The melasmic or pigmentary spots resemble the red or vascular spots in size and figure; and in the fact of being deepest in color in the centre, and fading towards the circumference. They are also, like the red spots, met with in clusters, forming blotches of considerable size, but variously tinted with pigment; and it is by no means uncommon to meet with cases in which the red and black spots, variously commingled, are distributed over the whole body of the patient. At an advanced period of the disease, it may also happen that the black pigment is removed, and a white and bleached spot left in its place. In these three variations of color, we find illustrated, the red, the black, and the white leprosy of authors; the two latter being the lepra melas and leuce, vitiligo nigricans and candida, morphœa nigra and morphœa alba.

The exanthema of elephantiasis may appear upon the skin as a single spot; for example, on the cheek; or, as a few spots and blotches scattered over the trunk of the body, as upon the back and chest; or, as a more abundant eruption, resembling a roseolous or rubeolous rash. In the latter case the likeness to rubeola may be increased by the presence of a smart exanthematous fever, and by a subsidence of the constitutional symptoms on the development of the eruption. The spots usually make their appearance without any local inconvenience; sometimes, however, there is a slight degree of itching or tingling, and, not unfrequently, a feeling of rawness or soreness, of extreme sensitiveness or aching pain. This state of hyperæsthesia accompanies the congestive period of the exanthema, and subsides by degrees until in the pigmentary period the sensation of the skin is lowered, a feeling of numbness takes possession of the part and runs on to anæsthesia, more or less complete; while, in the achromatous stage, sensation is entirely annulled. With the congestive period, moreover, it is not uncommon to find an increase in quantity of the sebaceous secretion of the skin (*unctuositas elephantina*, Plenck); and this also ceases during the pigmentary period; the epidermis becomes dry, sometimes it is parched, and sometimes cracks and breaks into fissures, and is removed by desquamation.

With dryness and desquamation of the epidermis we commonly find a prominent and impacted state of the follicles, the latter are distended with a dry epithelial sordes, the nails also loosen from their matrix and break off, and the hair of the affected parts of the skin out. This is especially the case with the eyebrows, and in a less e with the eyelashes, the head, the face, and the trunk of the . The loss of the hair from defective nutrition has suggested rm *elephantiasis alopeciata,* as one of the synonyms of the disease. hair is also apt to undergo another change; it becomes white with ss of pigment which accompanies the achromatous stage of the se, and, in its bleached condition, may be found occupying the th, white, anæsthetic spot of leuce. If the disease commence re puberty, the hair of the face is often undeveloped, and, in the le, menstruation is retarded and subsequently is deficient and ular.

ext to the vitiliginous or spotted appearance of the skin, and the arkable tints of color of the spots, we are attracted to the other sical characters of the exanthema. In the first instance, there is elevation of the spots above the surrounding surface; but, if we h them with the finger, we discover that they are hard in the re, and that the derma is not only congested but it is also thick- l. If we pinch up a fold of skin, including one of the spots, the kening is more obvious, and in a blotch or cluster of spots the ven thickening is very perceptible. The thickening of the skin ving partly to the increased bulk of the congested vascular plexus; is chiefly due to exudation from the vascular plexus into the tissue he corium. At first the thickening is only perceptible to the h, but soon it becomes distinguishable by the eye. The interfolli- r cutaneous tissue is puffed up above its ordinary level, while the tures of the follicles look enlarged; and the skin has the coarse ctated appearance of the rind of an orange. This kind of eleva- may be met with wherever the spots and blotches occur; but, a other parts, and particularly on the face and limbs, the promi- ne of the cutaneous tissue is apt to assume the form of small tuber- , corresponding in breadth with the size of the spots from which r arise. Before the tubercles rise above the level of the surface r may be felt as knots in the skin; and when they have risen, it vident that they owe their origin to a thickening and infiltration he cutaneous tissue, similar to that which occasions the broad ches of coarse punctated skin. The tubercles necessarily follow distribution of the exanthematous spots; in some situations being ated; in others, congregated in small clusters.

aving proceeded thus far with our description of elephantiasis, are in a position to recognize those special symptoms or characters ch constitute the distinction between the tubercular and the anæs- ic form of the disease. In its first operations on the skin, the dis- attacks at the same moment the cutaneous tissues and the ulti- ramifications of the cutaneous nerves. In its future progress it bits an elective affinity for the surface tissues, on the one hand, r the nerves, on the other; in the former case it produces tuber- and becomes tubercular; in the latter case it follows the nerves ards to their source, and destroying their function as it proceeds, sions anæsthesia; while, in a considerable proportion of cases, as

tribution of spots or blotches, may appear upon the skin
accompanying constitutional symptoms, or they may a
cession until they cover the greater part of the body e
constitutional symptoms; but a sudden and general
eruption is usually associated with a smart attack
toms, namely, chills, succeeded by heat of the sk
somnolency, and incapacity for exertion of every
The spots and blotches of elephantiasis, at t
have a pinkish or purplish red color; after
redness is deepened and assumes a brown or c
the deposition of pigment in the rete muc
redness subsides, and a brownish-black or
the place of the original red spot. The m
resemble the red or vascular spots in siz
of being deepest in color in the centre, ar
ference. They are also, like the red sp
ing blotches of considerable size, but
and it is by no means uncommon to
and black spots, variously comming
body of the patient. At an adva
also happen that the black pig
bleached spot left in its place.
find illustrated, the red, the bl
the two latter being the lepra
candida, morphœa nigra and
The exanthema of eleph
single spot; for example,
scattered over the trunk
as a more abundant er
rash. In the latter cas
the presence of a sma
the constitutional sy
spots usually make t
sometimes, howeve
and, not unfreque
sensitiveness or a
the congestive p
in the pigment
ing of numbn
thesia, more o
tion is entire
is not uncom
secretion of
ceases duri
sometimes
and is rem
With c
find a pr
tended w
matrix

s of
vascu-
these pro-
ss of con-
distended as
the capillaries
network in the
takes place as the
ntil a large surface,
e, or a portion of the
ce of a dilated capillary
ely over the surface; it is
ar copper-red color to the
leprosy. The redness of the
but that of the dilated plexus
breaks up the plexus, and a
mains of the vascularity in the
the exanthematic spots, as a con-
and heightened circulation of the
is not confined to the spots, it
and upper part of the neck, on the
from the hands and feet, it creeps
shoulders in the upper extremities, to
It is greatest on the hands and feet,
course upwards upon the limbs. The
yellow-brown, red-brown, purple-brown,
sometimes having a leaden hue, and
of oxidized silver. But on the comple-
pigment disappears, and gives place to

resulting from exudation in the cutane-
sensible only to the touch, sometimes it pro-
of surface, which may be compared to
sometimes a tumid and slightly elevated blotch,
transparent, and resembling gelatinized skin, and
defined prominence, varying in breadth from one
which has received the name of tubercle. The tubercle
skin before it rises above the surface, and rarely
elevation; it is generally discrete, but sometimes
clusters and forms a compound or nodulated
inch to an inch in diameter, and of considerable
some time after its appearance, the tubercle looks
surrounding skin, by degrees it becomes red from the
network of capillary vessels that occupies its surface;
transparent as though gelatinized, and a few small
straggling over its surface. These changes mark
metamorphosis of the tissue of the tubercle, from a state
divergent from the healthy structure, to the gelatinous

The nodulated tubercular ster of tubercles, not form small cutaneous instances terminate in

and tuberculation of the lbuminous fluid, sometimes nsparent, into its tissues; and ion of the fluid portion of the at an early stage of the disease, nds and feet, and by a progressive e skin, as of the forehead, the nose, eeks, and the ears. At a later period of the serous element of the blood is f a bulla upon one of the extremities. pears on the foot; this is followed after a on the hand; later, the other foot and the similar manner. After some days the bulla to an opalescent albuminous fluid, possibly it d a third time, and then the excoriation heals. ned, *in limine*, that although the tendency to exu- , and œdema, exists in both forms of leprosy, it is næsthetic form, and its presence in a considerable ognomonic of the latter variety of the disease. The e tubercular form of the affection are disposed to soften converted into abscesses, which burst and heal, or degene- hronic ulcers. But in anæsthetic leprosy, although there bercles, there constantly occur elevated spots and blotches ed by serous infiltration into the tissues of the derma. These and blotches are transparent, as though the tissue were gelatin- , and may be regarded as showing a disposition to that surface sudation which constitutes a bulla.

n an advanced stage of tubercular leprosy, where the skin of the ater part of the body has undergone exanthematous congestion and kening, ulcers of considerable extent are apt to take place, and an remity may be robbed of its integument from the hand to the ulder, or from the foot to the hip. So in the anæsthetic variety of disease, the excoriations left by the bullæ, which heal readily at t, may after a time become stubborn ulcers, constantly discharging rous fluid, and refusing to heal. But in the anæsthetic form of hantiasis, the ulceration does not assume a superficial character spread along the skin, it sinks more or less deeply into the sub- aneous tissues, and seems to have for its object the excretion of a ous and colorless fluid in great abundance.

oncurrently with the pathological processes now described as ing place in the skin, the mucous membrane undergoes similar nges. The conjunctiva is more or less reddened, and, at a later ge, thickened and opaque, or transparent and anæmic. The mucous mbrane of the nose is congested and thickened, producing obstruc- of respiration, expanding the nostrils and altering the voi sometimes secreting an abundance of opaque mucus, occasionally streaked with blood, and not unfrequently offensive. The mucous covering of the mouth is spotted like the skin, the soft palate and pillars of the fauces are thickened and tuberculated, the mucous glands of the pharynx enlarged, and the mucous lining of the larynx thickened and nodulated. The voice is hoarse, and the throat dry, and the patient is occasionally troubled with a short mucous cough. At a later period, there may occur ulceration of the thickened mucous membrane of the nose, throat, and larynx; while the occurrence of chronic diarrhoea and dysentery leads to the inference, supported by post-mortem examination, that there prevails an enlargement of the mucous glands of the alimentary canal and superficial ulceration.

The nervous system, like the surface tissues of the body, participates in the general evil; and it is worthy of observation that, in certain cases, the surface tissues principally suffer, while all but the peripheral plexuses of nerves escape, constituting tubercular elephantiasis; but in others the skin and mucous membrane only suffer secondarily, the chief force of the disease being thrown upon the nervous tissue, constituting anæsthetic elephantiasis. And as we have already had occasion to remark, a blending of the two series of symptoms constitutes the mixed form of the disease. In neither of the two principal forms can it be said, that the skin and mucous membrane on the one hand or the nervous system on the other entirely escape; but the distinction is founded on a predominance of one or other of the two kinds of affection, peripheral or neurotic.

In the tubercular form of the disease we rarely hear of pains; the patient is well, all but the outward signs of the complaint; he eats and drinks and sleeps well, and at an early period can scarcely be brought to comprehend the necessity for treatment. But, in the neurotic or anæsthetic form, we are admonished of pains, and painful sensations, and mental suffering, from the very commencement. In the early stage of the disease the pains are superficial, pricking, tingling, and shooting, associated with abnormal sensations of heat and coldness, tightness, constriction, heaviness, and numbness. In parts of the skin there is excessive soreness, sometimes as if the cuticle had been removed by a scald, constituting hyperæsthesia; while in other parts there is anæsthesia; and, at a later period, total loss of sensation in the part previously so abnormally sensitive. The legs, from the ankle to the knee, are commonly the first to show signs of insensibility; while, at the same time, very possibly, the soles of the feet are hot and tender.

In the first instance the pains occupy the cutaneous nerves, and are elicited by the nerves of sensation in every part of the skin; by the filaments of the fifth nerve in the face; by the cutaneous branches of the spinal nerves on the neck and trunk; and by the cutaneous branches of the nervous cords in the limbs. As the disease advances the deeper nerves are implicated, and then erratic and fugitive pains are felt shooting through the limbs, lasting for a while and then ceasing, to be again reproduced without apparent cause or warning. The nerves the more especially the seat of these morbid phenomena, after the fifth pair, are the cutaneous, the trunk of the ulnar nerve, and the cutaneous branches of the radial nerve in the upper extremity; and the cutaneous branches of the crural, the peroneal, and the posterior tibial in the lower extremity. These nerves sometimes acquire so great a degree of sensitiveness, that a slight pinch of the skin is exquisitely painful; and a knock upon the limbs thrills through the whole system like an electric shock. We may produce these sensations at will, by pressing the ulnar nerve against the inner condyle of the humerus; and we are at the same time made aware that the trunk of the nerve is increased in bulk, that it is twice or three times larger than in its normal state, and that it may be seen as well as felt through the skin. Moreover, that here and there may be found knots or ganglia on the cutaneous nerves, which are equally painful to the touch.

The researches of Danielssen and Böeck into the pathology of elephantiasis, have shown that the morbid changes which take place in the nerves are identical with those occurring in the skin; that, in the first instance, there is an erythematous hyperæmia or neuranthema of the nervous sheaths; that a transparent, viscous fluid is transuded into the sheaths, separating the nervous filaments, and compressing them so as to disorganize their contents and eventually obliterate their tubules; that coincident with these processes the nerves enlarge to several times their normal diameter, and eventually shrink into discolored atrophied cords and threads. And we perceive in these phenomena an explanation of the alteration of function which the nerves undergo; in their congested state, more sensitive than natural, tortured with pains when compressed and displaced by the transuded fluid, and paralyzed and reduced to insensibility by a continuance of pressure and consequent exhaustion of vital power.

The same authors have pointed out, that the erythematous hyperæmia is a true neuranthema, developed in circular spots, like the spots on the skin, and occurring at irregular distances on the trunk of the nerve, so as to give it somewhat of a nodulated or ganglionated character. The cutaneous fibrils are evenly swollen, and the nerves next affected are those which receive cutaneous branches, the first points of congestion corresponding with the union of those branches with the main trunk; moreover, that the enlargement is greatest where most cutaneous branches unite with the trunk of a nerve. The color also of the nerves corresponds with the coloration of the skin; in the early stage of hyperæmia the inner surface of the nervous sheaths and the nervous fibrils have a pink and roseate hue; later a deep and dusky red; and, later still, when the nerves have passed into their insensible and atrophied state, they have a reddish-brown color, and the peripheral ramifications may be discerned as brownish streaks in the tissue of the skin.

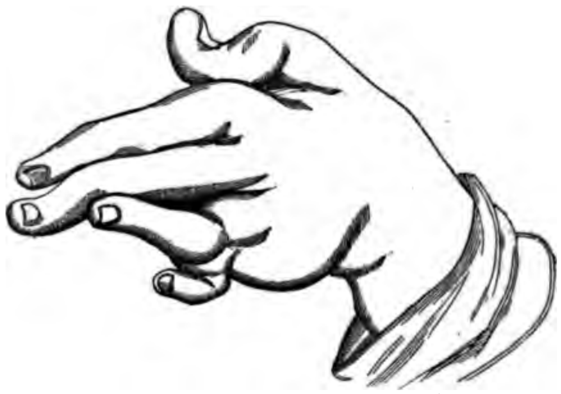
The morbid affection of the nerves in elephantiasis begins at the periphery, and follows the course of the nerves upwards to the nervous centres, the spinal marrow and the brain. It is greatest in the posterior columns of the spinal cord; and consists, as in the nerves and skin, of vascular congestion, thickening of membranes and transudation, followed by hardening of the nervous substance, and eventually shrinking and atrophy. Danielssen and Böeck, in severe cases, found the dura mater and the arachnoidean spaces distended with serous fluid, thick deposits of a whitish albuminous substance accumulated on the surface of the spinal cord, particularly its posterior segment; adhesion of the pia mater and arachnoid, forming a layer as thick and dense as the dura mater, and a want of normal adhesion between the arachnoid and the substance of the cord; the latter, in some instances, being so much indurated as to creak like cartilage during its section with a knife. They found also a pathological condition, similar to that already described, of the brain and of its membranes, transudation, thickening, hardening, and diminished vascularity. Deposits of albuminous lymph are seen in the sulci of the hemispheres, in the hollows around the roots of the nerves; and the sheath of the Cassérian ganglion is sometimes so much distended as to give the appearance of a small tumor at the base of the cranium; while the distension of sheath follows its principal branches for a short distance in the course of their distribution.

With the morbid anatomy of anæsthetic elephantiasis thus displayed before our view, we are enabled to comprehend more clearly the semeiology of the disease, the hyperæsthesia, the anæsthesia, the neuralgia, the perverted sensation of heat and cold the loss of muscular power, the disordered assimilation, the defective nutrition the imperfect sanguification, the metamorphosis of the red particles of the blood into melanic pigment, the anæmia, the loss of vision, of smell, and lastly, the mental torpor and incapacity. We can also comprehend another singular phenomenon of the disease, namely, the painless elimination of a bone of the foot or hand, or the amputation of a part of a limb.

To go back somewhat in our description of elephantiasis, it must be remarked that one of the most frequent and commonest of the symptoms of the disease, is a puffiness of the hands and feet, from œdematous transudation into the subcutaneous cellular tissue. In advanced stages of anæsthetic leprosy, it also happens that pains are felt in the foot or in the hand, that the pains are succeeded by the development of a bulla, and that, as the result of the exudation on the skin, the pains subside and are relieved. This process is repeated, one while on a foot, then on a hand, and the excoriated surface heals readily. Later in the course of the disease, the excoriation fails to heal, and an ulcer remains, which pours out a transparent or semipurulent fluid in considerable quantity. The discharges from the ulcer evidently act as a source of relief to the general system, but in time the ulcer closes, a want of the accustomed issue is felt by the economy, and a second ulcer opens to supply the place of that which had healed. These ulcers have callous edges, a smooth, ungranulating surface, and are insensible to irritation. At a still more advanced period of the disease a fluctuating spot may be discovered on a toe, or in the sole of the foot; it breaks and pours out a quantity of semipurulent matter, and after the escape of this matter, continues to dis-

n abundance of a transparent albuminous fluid. Such an
l sometimes heal, and another form, but it may also happen
ng to heal, it may sink deeply into the soft parts and reach
he bone.
t improbable that a congestion of the capillaries, similar to
h takes place in the skin and in the sheaths of the nerves,
so in the periosteum of the bones, and is attended with
athological consequences, namely, effusion of albuminous
separation of the periosteum, resulting in necrosis and ex-
f the bone through the ulcerated opening. When this
rocess takes place on a toe or a finger, the first or second
is destroyed and removed, leaving the last phalanx and the
ring at its extremity. The affected member is necessarily
l, and not unfrequently pulled out of its normal position, and
ess distorted by muscular contraction. When the ulcer takes
the sole of the foot, a tarsal bone may in the same manner
nd the morbid process may be repeated first in one foot or
l then in the other, and continued in similar succession until
nay be amputated at the ankle-joint, or the hand at the wrist,
this may be accomplished without pain or suffering to the
in consequence of the obliteration of the nerves, and the
ic state of the part. Generally the ulcer is preceded by some
f aching, but the discharges from its cavity relieve the pain,

Fig. K.



Hand of a lady affected with anæsthetic leprosy.

ribute very importantly to the comfort of the patient. It is
ble how complete and symmetrical these amputations gene-
, how perfect the healing process which accomplishes the
l it is singular in some instances to find the cartilage of a
nding in a firm and solid union with the integument.[1]

---

per establishment on the Ile Curieuse at Seychelles, affords the following
lustration of the mutilations effected by the anæsthetic form of elephanti-
thirty-one patients, the following examples were presented: loss of both
loss of one hand, 1; loss of fingers and toes, 27; loss of all the fingers

In the anæsthetic form of leprosy, the ulcerative process sometimes attacks the face; the periosteum of the nasal bones takes on the morbid action, and the bones are discharged through an ulcerous opening; sometimes ulceration occurs in the cornea, the humors are let out, and the eyeballs collapse; but more frequently a dense muco-purulent secretion concretes on the conjunctiva; the eyelids being kept permanently apart by contraction of the surrounding skin, ectropium is produced; and the lower lip is drawn down so as to expose the gums, which are also covered with a dry squamous crust, while the saliva flows from the angles of the mouth, and the tears from the eyelids.

Reverting to the beginning of elephantiasis and the period during which the poison is present in the system without giving rise to any manifestation of its existence, it is evident that this, the *latent period* of the disease, extends over many months, sometimes, not improbably, over years. The next period, the period of evolution or eruption, the *exanthematous period*, may be occasioned by the mere force of the disease, or by some accidental cause producing a febrile erethism of the system; hence the evolution may be partial, perhaps limited to a single spot; it may be slow and progressive, or it may possess some degree of energy and show itself more extensively. Sometimes it is preceded by a true exanthematic fever, that may equal in intensity a rubeola or a syphiloderma. Like the exanthemata, the febrile symptoms subside when the efflorescence has appeared on the surface, and the attack might be mistaken by those not familiar with leprosy, for a rubeola, a roseola, a scarlatina, or a secondary syphiloderma.

It is curious also to note, that not only are the constitutional symptoms relieved by the outbreak of the exanthema, but the fever having subsided, is not again renewed for several, sometimes for many, months or years. At other times the fever is repeated at shorter intervals, such as a month, and recurs with regularity, suggesting, with its accompanying symptoms, namely, chills followed by heat, an intermittent fever. The *febrile period* commonly lasts for a week, sometimes for two or three weeks, and then suddenly subsides; occasionally it may be protracted to a longer time, and raise a suspicion of continued fever. The common symptoms of the febrile period are chills, succeeded by burning heat without perspiration; sometimes perspirations without sensible heat; somnolency during the day; restlessness at night; inaptitude for exertion; mental dejection; headache; dry mouth and throat; thirst; and total loss of appetite. To these symptoms are sometimes added, fugitive shooting pains, unpleasant dreams, and nocturnal emissions.

Associated with the infiltration of the subcutaneous cellular tissue of the feet and hands, and the tendency to infiltration and gelatinification of the blotches, is the existence of albuminuria. But this symptom does not seem to alter in any way the condition of the patient, it

---

and toes, 6 ; loss of nearly all the fingers and toes, 6 ; loss of fingers only, 4 ; loss of toes only, 4 ; loss of sight, 4 ; falling in of the nose from destruction of the bones, 3 ; ulcers, 16 ; and tubercles of the face, only 3. In this same community were eighteen unaffected persons.

dds gravity to the disease nor increases the debility of the
nd it appears and disappears without any apparent conse-
while post-mortem examination discovers no more serious
in the kidneys than is met with in other organs.

ortem examination of those who have succumbed to leprosy
at the skin, the mucous membrane, the subserous tissues, the
e liver, and the kidneys, are the structures the most injured
cular leprosy; while in the anæsthetic form of the disease, the
system, the serous membranes, the muscular system, as also
, kidneys, and spleen, exhibit a morbid state; the lymphatic
eing slightly deranged in both. In the former, infiltration
gives rise to an apparent hypertrophy; while the latter is
d with anæmia and atrophy.

ercular elephantiasis, thickening and ulceration of the mucous
e is met with in the conjunctiva, Schneiderian membrane,
embrane, membrane of the fauces, larynx, and pharynx; and
ls of the intestinal mucous membrane are enlarged and ulce-
oducing chronic diarrhœa and dysentery. The spleen is en-
he liver fatty, with tubercular deposits covering its surface;
similar deposits in the subserous tissue of the uterus and
aments; and the kidneys are flabby and congested. In an-
elephantiasis, besides the morbid appearances already noted
ervous system, the mucous membrane of the stomach and
ry canal is anæmic and pale; and there is a pervading atro-
ssue both in the organic and in the muscular system.

have said, anæsthesia is present in both forms of the disease,
eatest in the anæsthetic form; and in the latter is associated
ter degree with loss of muscular power, defective nutrition,
ension of animal heat. The insensibility of the skin some-
ecedes every other symptom, and is the first that attracts the
of the patient to his state;[1] and it is apt to run on until a
per may be held to the skin without being felt. Strong caus-
be applied to ulcers; parts may be divided or incised; even
on at a joint may be effected, without the slighest suffering or
ience being evinced. Loss of muscular power is first exhibited
nds and in the feet; the fingers and wrists lose their strength;
rs are commonly taper and thin, and the interosseous spaces
rom atrophy of their muscles. The weakness of the feet is
y a loss of confidence in walking, and a fear of stumbling.
nutrition is declared by the emaciation of the whole frame,
wish and purplish hue of the skin, and a general appearance
ia. While the reduction of animal temperature is proved
xperiments of Danielssen and Böeck, who found the mercury
ermometer stand at twenty degrees of Fahrenheit below the

---

our patients, had his attention first drawn to his disease by the fall of
ter on his arm, without occasioning sensation. And Dr. Nicholson, of the
pital at Tracadie, in New Brunswick, observes: "I have known one of
s in the hospital burn her hand and arm severely at the stove without
e of the injury until told of it by one of the patients."

normal standard, when held in the hands; and nearly five degrees when placed in the mouth, arms, axillæ, and groins.

Elephantiasis is brought to a fatal termination by asthenia and apnœa; and sometimes possibly by coma. Asthenia may be induced by chronic diarrhœa or dysentery, or by the progressive atrophy of the nervous system; apnœa, by thickening and ulceration of the mucous membrane of the larynx; and coma, by suspension of function of the kidneys, or serous effusion into the cranial cavity. The average duration of life in the two forms of the disease, as stated by Danielssen and Böeck, is for the anæsthetic kind upwards of eighteen years, and for the tubercular kind less than ten years. Of twenty-four cases of anæsthetic leprosy, twelve survived more than twenty years, and one thirty-one years; and of eighty-eight cases of tubercular leprosy, fifty-four ranged in duration from six to eleven years, and one survived twenty-two years. The relative proportion of the two forms, of the disease, as deduced from the observation of 1468 cases was, tubercular, 758; anæsthetic, 488; and mixed, 222.

NGERENGERE and TUWHENNA are the native names of a disease of New Zealand analogous to anæsthetic leprosy, and described by Dr. A. Thomson[1] under the title of lepra gangrænosa. The disease begins in the lower limbs with desquamation of the cuticle, and spreads more or less extensively over the body. Sometimes the skin becomes cracked and fissured, and sometimes presents signs of considerable irritation. Many months later, and sometimes after an interval of several years, the skin of the face, and especially of the forehead, nose, and lips, becomes bloated and shining; the hair of the eyebrows, eyelids, whiskers, and beard falls off; and the face and skin assume a pallid hue, mixed with a purple tinge.

At a later period, a bleb or fissure forms in the joint of a phalanx of the hands or feet; ulceration follows, and sinks deeply into the part; the joint gives way, and the phalanx separates without pain. This process is repeated on other fingers and toes; then invades the metacarpus and carpus, the metatarsus and tarsus; and the hand or foot becomes separated without suffering to the patient.

Dr. Thomson further reports that the general health of the patients is little disturbed, and that they seem cheerful and comfortable. The disease begins at puberty, or between that period and the age of thirty, and terminates fatally in from one to eight years; the fatal issue being determined by affection of the air passages or diarrhœa. The patients seen by Dr. Thomson were highly scrofulous.

In this short narrative we find condensed the common history of elephantiasis anæsthetica. There is no ground for the term gangrænosa, applied to the disease by Dr. Thomson; the mode of separation of a member at the joint being identical with that which takes place in ordinary anæsthetic leprosy (elephantiasis mutilans). The presence of anæsthesia in the progress of the disease appears to have been overlooked; although it must necessarily have been present.

---

[1] Brit. and For. Medico-Chirurg. Review, April, 1854.

CASES OF ELEPHANTIASIS.

t twenty-five cases of elephantiasis Græcorum have come under
observation, of which we have preserved the notes of twenty-
'wenty-two of these cases were those of Europeans, and one a
f Hindostan; the special source from which the cases were
being: from the East Indies, including the islands of Ceylon
l Mauritius (five), twenty; one from China; and from the West
hree. Twenty were males, and four females; the age of origin
between seven years and sixty-seven, and the duration of the
en years.

cases illustrate the three periods of the disease, namely, its
riod, its febrile period, and its persistent period, together with
varieties of manifestation, namely, neurotic or anæsthetic,
is or tubercular, and mixed tubercular and anæsthetic. One
ses fixes the attention on a remarkable resemblance between
iasis and syphilis, and suggests a comparison with the latter
and at the same time raises the question of the possibility of
n by syphilitic inoculation; while others point to ordinary
onnection, to vaccination, and lactation, as possible means of
sion.

1.—ELEPHANTIASIS TUBERCULOSA; *no pains; febrile attack*
ing rubeola; vaccinated from a native child; latent period, two
resent duration, five years; patient living and enjoying average

ing gentleman (E. W. P.), aged sixteen, with fair hair and
ion, and somewhat more youthful in appearance than might
cted of his age, has been afflicted with the tubercular form
sy about five years. He was born in Ceylon, is the son of
n parents, and one of six children, all of whom are healthy.
er and mother have always enjoyed good health, the father
resided in Ceylon for twenty years, the mother since her mar-
He was nursed by his mother, but vaccinated with lymph
om a native child.

patient was sent to England for his education at the age of
e had suffered from dysentery while in Ceylon, but had reco-
nd was in good health on his arrival in this country. About
rs after this period his mother remarked an alteration in the
nce of his countenance; it was pallid, had a yellowish-brown
d was somewhat spread out, as though the features were
l and flattened; he shunned amusements, was fond of sitting
d secluding himself, became remarkably timid, and had fre-
ts of crying. There was no alteration in the animal functions,
suspicion of his being out of health, his peculiar habits being
d to idiosyncrasy rather than to disease. In March, 1863,
en thirteen years and three months old, he was seized with an
matous fever, which was regarded as rubeola, and which con-
m to his room for fourteen days. There was nothing unusual
febrile symptoms; he was chilly and sleepy, had headache,
nd loss of appetite, and being sent to bed, an exanthem ap-

peared upon his body, chiefly, he thinks, on his legs. He does not remember if he had coryza and catarrh, but he was the only boy in the school seized with the disorder; and the spots which then broke out upon his skin became permanent, and have remained until the present time. His face and the uncovered parts of his neck are of a reddish-brown hue, contrasting strongly with his light hair and the normal fairness of the skin; the deepest shade of brown, with a yellow tinge, is apparent on the forehead, and a roseate and purplish tint plays about his nose and ears. His hands are deeper in color than his face, and are of a blackish-brown or bronze color. These are the three varieties of color commonly met with on the skin in this disease, namely, a brown, which is sometimes reddish (copper color), sometimes yellowish or tawny, and sometimes blackish or melasmic, or bronze-colored. On removing his clothes the brown tint was found rising up the arm to the shoulder, and from the foot to the groin, becoming lighter in its ascent, and leaving the trunk of the body of its normal fair complexion. The feet are of a livid brown color, and always cold.

The skin of the face is of an uniform tint; there are no maculæ; but there is an evident swelling or thickening of the integument, which has altered the natural appearance of the features. The brow is somewhat heavy, the alæ of the nose spread out, and the ears prominent. The pores of the skin, also, are more apparent than usual, from hypertrophy of the intermediate skin. But a more striking character perceptible on the face is a crop of small tubercles, two lines in diameter, and one in elevation, sprinkled over the surface. About forty of these tubercles are dispersed upon the forehead, a cluster of fourteen being situated just above the root of the nose. A few of the tubercles are three lines, and three upwards of four lines in diameter. The smaller tubercles do not differ in tint of color from the surrounding skin; but the larger ones are semi-transparent, as though gelatinized, and traversed by three or four minute venules. There is also an incipient nodulation of the anterior border of the helix of the external ear. The eyebrows are scanty and thin; there is a general baldness of appearance of the face; and the conjunctiva is pallid and traversed by large venules. There are no signs of disorder of the mucous membrane of the nose, mouth, or fauces; but the voice is weak and somewhat altered from its natural tone.

The tubercles on the face were originally maculæ of a pale pink color, and were not elevated into their present shape until a year after the supposed rubeola. Similar spots were apparent on the lower limbs during the rubeolous fever, and are now to be seen on both lower and upper extremities, together with a faint roseolous rash on the front of the chest and abdomen.

The circular maculæ dispersed on the arms and legs have a reddish and yellowish-brown tint; they are slightly elevated by transudation into the tissue of the corium, and larger on the legs than on the arms; for the most part isolated, and having an average diameter of somewhat more than two lines, they are here and there collected into circular blotches, measuring nearly half an inch in diameter, and are

iously elevated, according to the amount of œdematous infiltration.
y are scantily dispersed over the scapula, are numerous at the
nt of the shoulder and the back of the upper arm, but most abund-
on the forearm, and are absent on the hands, their place on the
er being occupied by the bronzing of color already mentioned, and
a puffy œdema of the back of the metacarpus, more particularly
the radial side. On the lower extremities there is a cluster of
ed maculæ over the buttock, a few on the upper part of the thigh,
many on the leg; and the instep, like the back of the hand, is
fed by œdematous infiltration. The maculæ are numerous on the
of the feet, and the integument near the root of the toes is some-
at œdematous and benumbed. As we have already noted, there is
melasmic pigmentation of the skin of the trunk of the body; and
front of the chest and abdomen presents a faint roseolous mottling.
urning to the mucous membrane, we find the conjunctiva pale on
inside of the lids, but congested on the eyeballs. He has had a
ing of "stuffiness" of the nostrils for about two years, and is sub-
to frequent attacks of catarrh. About six months back the mucus
n the nose was streaked with blood. The mucous lining of the
es is normal; and no change is visible in the neighborhood of
glottis to account for his change of voice. His tongue is clean
appetite good, but he suffers occasionally from what he calls
ous attacks. The abdominal organs are apparently healthy, and
general condition is normal. He has had no pains or aches of any
d, nor any indication of affection of the nervous system, beyond a
ing of numbness in the sole of the feet; a numbness that extends
the right leg to the hip, and a constant coldness of the feet. These
symptoms which have scarcely attracted his attention, but may be
beginning of neurotic disorder. He sleeps well, without dreams
discomfort; and although greatly depressed in spirits formerly and
uently weeping, he is now applying his mind cheerfully and hope-
y to the study of the classics preparatory to commencing a pro-
sional education.

t cannot be questioned that this is a case of tubercular elephantiasis,
the skin and mucous membrane are almost solely attacked; there
e been no neuralgic pains, and only a very trifling affection of the
aneous nervous system. It must be noted also that the tubercles
not whitish, as they sometimes are in tubercular leprosy, but
sparent and yellowish, the tissue of the skin having undergone a
tinous metamorphosis, common in this affection, and met with
in tubercular syphilis and lupus non exedens and erythematosus.
have remarked above that the semi-transparent tubercles are
aked on the surface by the straggling trunks of several minute
s. This case is also interesting as exhibiting the insidious and
gressive character of the invasion of elephantiasis. With the
ption of the rubeoloid attack nearly three years ago, he has
red no febrile symptoms whatever.

ASE 2.—ELEPHANTIASIS TUBERCULOSA; *ten years' duration; neu-
ic pains; cutaneous anæsthesia; partaking of the character of the*

mixed form, the tubercular being in excess; a brother died of mixed leprosy.

A young man (G. L.), aged eighteen, the son of European parents, was born in Bombay, and resided in that city until April, 1865, when he was sent to England for his health.

His father went to India from England at an early age, and held a civil appointment in that country; his mother was born in India of European parents. The father was twice married, and had children by both wives; seven by the first, four by the second. The mother was also married twice, and by her former husband had four children. She died at the age of thirty-two, of disease of the liver; and the father died at forty-nine, of disease of the thoracic organs, when our patient was one year old.

Of the three sets of children, the two first families were healthy; and of the last, four in number, the eldest and the youngest became the subjects of elephantiasis; the two intermediate children, a brother and a sister, remaining sound. The eldest son died of mixed elephantiasis, at the age of twenty-three; the youngest is the patient whose case we are now recording.

Our patient had good health as a child, and underwent the operation of vaccination with success. At the age of seven or eight, while at school, and without previous illness, he first perceived a brown spot or blotch upon the left forearm; subsequently a similar spot appeared upon the outer side of the right leg; and after an interval, on the inner side of the left knee, and afterwards on the thigh. With the exception of the spot on the right leg, the right side of the body remained free until ten years later; the spots were more numerous on the lower limbs than on the arms, and occupied the region supplied by the cutaneous branches of the crural nerve in the leg, and the internal cutaneous nerve in the arm. Subsequently to these appearances on the limbs, numerous small spots of the size of a small wafer appeared upon the face and entire body.

Having his attention drawn to the occurrence of spots upon the skin, he noticed that their color at the first appearance was a "beautiful pink;" that by degrees they assumed a purple tint, and subsequently faded to a dirty brown. At the present time there are examples of these shades of color, excepting the early pink, on different parts of the body. There is a slightly elevated tumor of about an inch in diameter upon the left cheek, the surface of the tumor being mottled with pink and purple; and a swelling over the ball of the thumb has the same tints, resembling a large chilblain. A similar swelling on the inner side of the left calf is knotty, and involves the saphenous vein, and the femoral glands on that side are enlarged. The color of the principal spots may be compared to that of the mulberry, and when chilled they have a leaden hue.

The swelling of the blotches is a recent event, and did not occur until a year back, after he had become affected with chancre, and was salivated for its cure. During this treatment he was feverish and ill and lost his appetite. He then [illegible] pains "*in the flesh;*" these pains were followed by redness [illegible], and by degrees the pain ceased. The attack of pains was periodical, occurring once a-month; he lost them, however, during his voyage to England, and regained his appetite; but having become wet and chilled during the late inclement weather of October, the pains have returned. They are not deep seated, but simply cutaneous, "pains of the flesh," as he terms them; and he remarks that they had increased in severity at each recurrence.

During the prevalence of the pains in his flesh he has some degree of feverishness, which comes on in the evening, with chilliness; and while in bed is followed by burning heat; but he has no perspiration, and his skin is commonly dry. When suffering from these feverish attacks he loses his appetite.. He has also been troubled since he left India with nocturnal emissions; they take place for two or three nights in succession, and after a similar interval, and sometimes occur twice in the course of the night.

In the interval of the feverish periods and the cutaneous pains, his spirits are cheerful; he reads, he sees sights, and he enjoys himself. He sleeps well at night, and has no drowsiness during the day. He was taken from school at the age of fifteen, in consequence of the illness under which he now suffers, and was put into a merchant's office, where he remained until his present visit to England.

In general appearance he is short and thin; his head somewhat large for his body, and the face pale and tawny. The expression of his countenance is dull and dejected; the skin is thickened and roughened by small whitish tubercles of about the size of a split pea, which have shown themselves during the last month, and the spaces between the tubercles mottled with a dirty brown tint. The only hair on his face, with the exception of the eyelashes, is that of his eyebrows, which are thin and scanty.

On close inspection the integument of the forehead is seen to be thickened and nodulated, particularly in the region of the eyebrows. The eyes are dull, the conjunctiva pale, the nose enlarged and nodulated, the cheeks are also thickened and nodulated, and the ears present the same character. The heavy brow gives a pensive thoughtfulness to the face, and reminds us of the leonine countenance characteristic of leprosy. Numerous small whitish tubercles of the size of a split pea are dispersed over the whole face; and on the left cheek is a large prominence looking like a subcutaneous abscess, mottled with red and purple. This prominence is affected with the periodical pains already described, but is not tender to the touch; on the contrary, it evinces a degree of anæsthesia, which is also met with in the similar swellings on his legs and arms. At a subsequent period this prominence formed matter and broke, and afterwards healed readily.

It is evident that the manifestation of the disease has been accompanied by an arrest of development of the body generally, and the check to development is especially shown by the non-production of hair, not only on the face, but upon the entire skin, with the exception of the head and pubes. We have already remarked on the thinness of the eyebrows, which gives a bald appearance to the face; and he informs us that his brother lost the hair of the pubes previously to his death.

Our patient's voice is puerile and weak, and somewhat hoarse, indicating thickening of the mucous lining of the larynx; the columnar folds of the pharynx are red and swollen; he has a sensation of tickling in the fauces, and an occasional slight cough, which raises a quantity of mucus. He complains of a bad taste in his mouth, the lips and tongue have a feeling of soreness, and the latter is pink towards the tip. The hoarseness has been evident for about a year; the affection of the mouth is recent.

His most annoying symptom, however, is a sense of fulness and dryness of the nostrils, which commenced eight months back. This inconvenience has gone on increasing, and within the last week has been accompanied with the discharge of a small quantity of clotted blood. There is evidently considerable swelling and thickening of the lining membrane of the nostrils, and possibly some slight degree of ulceration; but, with this exception, there is no excoriation of any part of the surface of the body, and no tendency to the formation of blisters on the skin.

He sees and hears well, and his appetite is good, excepting on the invasion of feverish symptoms and pains. The pains are in kind shooting and aching, and are always followed by an increase of swelling and congestion of the inflamed blotches, of which there are four or five dispersed over the body. Some of these blotches, of longest duration, are beginning to show signs of anæsthesia; but the insensibility is superficial and moderate in degree, and there is slight anæsthesia and loss of power of the left hand.

The hands are mottled blue and brown, and somewhat swollen, while on the inside of the wrist and ball of the thumb of the left hand is a swollen tuberculous blotch. The soles of the feet are covered with small brown spots as large as lentils, and some of these spots have recently been developed into whitish tubercles.

In summing up the special characters of tubercular elephantiasis, as presented by this case, we are struck with the chronicity of its nature, already ten years in existence, and so little progress made; then its first appearance as a single dark colored spot, followed slowly by other similar spots; next, the periodical attacks of fever of no great severity, preceding pains in a circumscribed patch of integument; then the roseate blush, the tumefaction, the purplish tinge, and the deep brown stain. These symptoms repeated at longer or shorter intervals for years, and succeeded by a moderate amount of anæsthesia, but as yet no leucasmic change. Next, the signs or morbid action in the mucous membrane; the hoarseness of voice; the dryness and obstruction of the nares; the nodulated thickening of the integument of the forehead, cheeks, and ears; and the production of whitish tubercles. Moreover, the arrest of development and growth, and the absence of hair.

CASE 3.—ELEPHANTIASIS TUBERCULOSA; *four years' duration; no pains; extreme chilliness; extreme mental dejection.*

A young gentleman (J. T.), aged twenty-one, born in Jamaica of opean parents, was brought to us in 1850, affected with tubercular osy.

He had been sent to England in 1846 for his education; he arrived September; the winter was severe, and he suffered very much from cold. During the following year he first observed reddish-brown aculæ on the legs below the knee; a year after they appeared on e face, and twelve months later spread to the trunk. With the evelopment of maculæ on the limbs and body, the face, the hands, nd the feet, became discolored; the face had a deep reddish-brown ue: the hands were of a blackish-brown color, the discoloration xtending up the arms to the shoulders, and becoming fainter in its scent; the feet were also deeply colored a livid blackish-brown, and he color rose upwards to the top of the thighs, being deeper below he knee than above. With the completion of the maculation of the body, the skin of the face and especially of the forehead became coarse and thickened, tubercular elevations were produced along the eyebrows, upon the nose, lips, and chin, and upon the prominent ridges of the ears. The thickening of the integument of the brows gave a frowning and dejected expression to the countenance, the appearance of dejection being increased by the presence of a leaden or purplish tinge. The skin was as though pricked over with depressed points, the mouth of the follicles; while the interfollicular portion was puffed and semi-transparent, and suggested the idea of the rind of an orange. The tubercles were firm to the touch, and somewhat more transparent than the surrounding skin. He had no whiskers or beard, and the hair had fallen from the eyebrows.

Close examination of the maculæ showed that the lining of the follicles was more deeply tinted than the interfollicular spaces, a condition that gave a spotted character to the maculæ. The skin was shining as though from a greasy moisture; but nearer inspection showed that this appearance resulted from tumefaction of the corium; that the maculæ were really drier than the rest of the skin, and defective in perspiration and sebaceous secretion, and that, as a consequence, the face was liable to be much irritated by the rays of the sun. The maculated portions of the skin were also deficient in sensation.

The mucous membrane of the eyelids and mouth was paler than natural, the conjunctivæ were suffused, the nares somewhat obstructed, and the voice was weak and husky, as though from thickening of the lining membrane of the larynx.

He was much depressed in spirits, and incapable of applying himself either to amusement or study; his manner was listless and melancholic, while the redness of the conjunctiva, combined with the heavy brow and severe expression of feature, gave an occasional gleam of savageness to his countenance. He was not troubled with pains of any kind, but his hands and feet were habitually cold, even in the summer time; indeed, he suffered more from cold during the summer than the winter, and his favorite haunt was the fireside. His hands, besides being deeply bronzed, were slightly puffed on the back; the fingers were attenuated, there was a visible loss of substance of the interossei muscles of the metacarpal spaces, and loss of power of the fingers and wrists.

The general health of the patient seemed good; he had a fair appetite, and the functions of the body were properly performed. He was behindhand in sexual development and instinct.

We were unable to follow the history of this patient further in consequence of his leaving London.

CASE 4.—ELEPHANTIASIS TUBERCULOSA; *no pains; extensive ulceration of the skin; ulceration of the mucous membrane; incipient leucasmos; fatal issue in ten years.*

A young lady, the daughter of European parents, residing in the island of Mauritius, was brought to us in the summer of 1852, suffering under tubercular leprosy. Her countenance was pale, broad, and bloated, of a yellowish-brown color, with a purplish, almost livid, blush on the nose, cheeks, and chin. The brow was heavy and frowning; the eye sunken, anæmic, and glistening; and the general expression of the features listless and melancholy. Her hands were thin, the fingers taper, and, with her feet, were deeper in tint of color than the face, the discoloration extending upwards upon the limbs. On the arms and legs were scattered a number of round maculæ, about half an inch in diameter, and of various tints of color. They had come out successively, were flat and smooth on the surface, but hard to the touch, both the hardness and the color becoming gradually diffused in the surrounding skin. The most recent of the maculæ had a delicate roseate tint; this became deeper with time, purplish and livid. In some the redness had entirely disappeared, and a deep brown stain remained behind; and in three or four the centre of the macula was undergoing a process of bleaching (leuce), and formed a pale disk, surrounded by a halo of dark brown, fading at the circumference into the general tint of the neighboring skin. There was, besides, a feeling of numbness of the limbs, a loss of sensation in parts of the skin of the legs just above the ankle, and on the older maculæ, more particularly those that had undergone the melasmic and the leucasmic change, and an arrest of perspiratory secretion.

The disease had probably existed in a latent state for some time before it was observed; the first symptoms that were noticed were the exanthematous spots, which immediately followed a slight intermittent feverishness of a few days' duration. With the development of the spots the feverish symptoms subsided, but new spots were thrown out from time to time without the recurrence of the febrile affection. The spots had first shown themselves two years before the time of our seeing her; and at the latter period she had no constitutional symptoms of any kind, excepting some degree of paleness of mucous membrane approaching anæmia; coldness of extremities, inappreciable to herself; and a certain listlessness, heaviness, sleepiness, and indisposition for exertion of every kind.

After an absence of six years we again saw this young lady, and found that the disease had made serious progress. The face was covered with tubercles, her complexion was yellowish-brown, the frowning eyebrows had lost their conjunctivæ were anæmic sy, the eyelids were drawn widely open, the hair of her head ıty, and presented a state of alopecia, the lobes of the ears larged, her limbs thin and shrunken, and her hands and feet and fingers attenuated. She died two years later, at the age ıteen. She suffered no pain, and seemed to have no idea of ılsive state. During the latter months of her life her vision akened, she had ulceration of the larynx, ulceration of the ıent of the arms extending from the shoulders to the wrists, ı were œdematous, the urine albuminous, the feet ulcerated, horous and semipurulent matter oozed from large openings in ı, and her failing powers were ultimately exhausted by diarıd dysentery.

5.—ELEPHANTIASIS TUBERCULOSA; *insidious invasion and ; fever of intermittent type; sharp exanthematous fever.*

ıtleman (B.), aged forty-three, a captain in the Indian army, l resided in that country seventeen years, noticed while in about the tenth year of his Indian service, a spotted discolıf the skin of his limbs, accompanied with a brown discolorahis hands, feet, and face. He was otherwise in good health, formed his military duties without inconvenience.

years later he suffered from a successsion of feverish attacks, tent in their character, which progressively increased in for two years, and rendered it necessary that he should ɔ Europe for relief. He describes his symptoms at that ıs being a constant state of fever, with exacerbations and ery other day. For these symptoms he was sent to Kissinl after a course of the waters, had an attack of his old sympgreater severity than usual, accompanied with some cerebral nce, which he called a "determination of blood to the head." a few days of this severe exanthematous fever, numerous ɔts appeared on the body and limbs, while the spots on his l and face were raised into small tubercles. The fever then l somewhat suddenly, and he had had no return of the feverɔtoms up to the date of this report, namely, a year and a half. ıpplication to us had reference to the maculæ on the skin y, and the maculæ and tubercles on the face. He considered lth to be good, and looked upon the feverish attack aı ɔn as a bath crisis; his only present complaint was coldness ınd hands, which was as troublesome in summer as in the eason. His face, his hands, and his feet, at this period, were ep purplish-brown hue; the discoloration extended up his ɔr some distance, and half way down his neck; but the f the body had not undergone the same melasmic change ı it was sprinkled over with small round maculæ and of various size. Along and immediately above the eyebrows elve or fourteen prominences at each side, of about the size ation of a split pea; in the lower part of the skin of the fored towards the inner end of the eyebrows, the tubercles were ; along its outer half they were clustered and confluent. On camination the tubercles appeared to be whitish and semi-transparent, and streaked by the ramifications of several small venules, the cuticle covering them being of a dark color like that of the surrounding skin. The hair of the eyebrows was thin and absent on the tubercles; while the dusky hue of the skin of the forehead, and the heavy frown of the rugous and hairless eyebrows, gave a strongly marked *leonine* character to the countenance.

The hands were thin, the interosseous muscles of the metacarpus shrunken, particularly those of the first metacarpal space. The fingers had a leaden hue, and the skin was smooth and polished, shining with the metallic lustre of lead or oxidized silver. On the limbs some of the blotches were raised by infiltration and semi-transparent; others had undergone partial absorption, and were collapsed and wrinkled; but all the older blotches were dry, from the absence of cutaneous secretion, and less sensitive than the surrounding integument.

CASE 6.—ELEPHANTIASIS TUBERCULOSA; *insidious invasion and progress; no pains; no fever; death in six or seven years.*

A gentleman (Mr. C.), in the judicial service of India, aged about sixty, who had resided in the East for upwards of twenty years, consulted us in 1857 for tubercular leprosy. The whole face including forehead, cheeks, nose, lips, chin, and ears, was studded with opaque tegumentary tubercles of about the size of a split pea, a few being larger. There were also a number of maculæ dispersed over the limbs, and some on the body.

He considered his bodily health to be good; he had suffered no illness of any kind, and he consulted us only for the eruption, which had made its appearance two years before, and had somewhat increased. He was listless and dull in his manner, and seemed incredulous of any aberration of health, ascribing his want of energy to the exhaustion consequent on a residence in India for many years. We lost sight of this gentleman a few months after his first visit, and have since heard of his return to India and death; the duration of the disease being six or seven years.

CASE.—ELEPHANTIASIS TUBERCULOSA; *insidious invasion and progress; extreme dejection; smart febrile attack; leontiasis.*

A captain in the Indian army (Captain G.) who had served through the mutiny, first observed symptoms of tubercular leprosy in 1857, and came before us for consultation in 1860. At this period his face presented a deep melasmic discoloration, and was covered with tubercles, which gave a frowning and morose expression to his countenance. The conjunctiva was reddened by congestion; his feet and hands were dark brown and purplish in color, cold and swollen. The limbs and body were sprinkled over with maculæ; his voice was husky, and his manner dejected, listless, and melancholy. He was sleepless and restless at night, and during the day would sit for hours in his chair without occupation, and without exhibiting any inclination for exertion.

He had a severe febrile attack, resulting as usual in an increase of the exanthema and greater prominence of the tubercles while under our care, and presented a good example of the kind of countenance,

rowning, which has been compared to that of the lion;
d for the disease the synonym, *leontiasis*.
man left London after a few months, and we were unable
ase further.

LEPHANTIASIS TUBERCULOSA; *satyriasis; red leprosy,*
ebrile attacks; neuralgic pains; anæsthesia; ulceration;
onic diarrhœa and dysentery; duration of disease fourteen

olonel B.), aged about sixty, who had spent many years
ndies, became the subject of tubercular leprosy about
re he came under our notice in 1856, and died of ex-
dysentery in 1859. The disease had existed altogether
years; and he believed it to have arisen from sleeping
bed in a negro's hut.

ance of this gentleman was very remarkable, his coun-
bling that of the satyr, as represented in the paintings
sters, and suggesting an explanation of the use of the
is, as applied to this disease. His features were large
red brown or copper-color (φοινικηιη νουσος, Hippocrates);
leeply wrinkled and studded with tubercles, two of the
e upper angles of the forehead resembling young horns;
thickened, heavy, frowning, and deprived of hair; the
with redness; the nose, lips, and chin sprinkled with
cheeks hollow; and the ears tuberculated, projecting,
y elongated. His voice was hoarse and sonorous; his
nct; he breathed noisily through the larynx and nose;
y deaf, and the mucous membrane of the fauces was
small tubercles, some in a state of ulceration.
were of a dark color and swollen, the discoloration ex-
rds to the shoulders; the trunk of his body was spotted
llowish-brown blotches, composed of an aggregation of
nterspaces of the blotches being mottled with separate
arms and legs were similarly spotted, and the feet
atous, and somewhat insensible. Moreover, on the heel
s a large superficial ulcer, which was insensible to the
pplication of caustic, and which poured out a copious
nous and semi-purulent secretion.
four years he was under our observation he had repeated
s, accompanied with neuralgic pains of a fugitive cha-
lowed in each instance by an augmentation of the exan-
ncrease in the number of the tubercles.
asthenia, consequent upon chronic diarrhœa and dysen-

LEPHANTIASIS ANÆSTHETICA *following vaccination; in-*
n; suspension of symptoms during pregnancy; neuralgia;
casmos; anæsthesia; death from illness following a second

d twenty-six, the wife of an officer of the Indian Army,
ed with elephantiasis in 1861. She was born in Cal-
pean parents, and brought to England when two years

old; she returned to India in 1853; was married in 1855; has been eight years married, and has now (1863) revisited England for medical treatment; the length of her residence in India being ten years.

In 1861, being then in Oude, she was vaccinated from a native child, and shortly after the vaccination "a slight spot came on her cheek, and increased in size to the diameter of a shilling." It was hard to the touch, a little raised above the level of the surrounding skin, and of a dull red color, without pain or tenderness. The swelling was painted with iodine, and afterwards blistered several times, and the blister kept open; but although somewhat reduced in size, the prominence was not removed. About six months later, dull red flat spots appeared dispersed over the greater part of her body. Her hands and feet became swollen, and she had pains of some severity in her joints and feet.

She reports that her general health is good, she has a good appetite, and digests well, but her pulse is weak, and menstruation scanty; she has had no family.

The spots upon the skin vary in size from a quarter of an inch to an inch in diameter; some are mere erythematous blotches, these assume a dusky brown tint, then the brown color is discharged, and blotches of white (leuce) take their place. The first spot that appeared had a prominent character from the beginning, the elevation being occasioned by serous infiltration into the cutaneous tissue. Two or three other similar prominent blotches have formed subsequently. That on the face retains its brown color, while around it is a ring of white, and bounding the white a deep tint of brown, which fades away gradually into the surrounding skin.

In this case are seen the dull red erythematous blotches characteristic of the disease; secondly, the brown blotches verging to black; thirdly, the bleached and colorless blotches; fourthly, the prominent blotches, caused by serous infiltration of the tissues of the skin; and, fifthly, the insensibility or anæsthetic element. Her hands and feet have a benumbed feeling, she picks up small objects with difficulty, and there is a degree of loss of power of the lower limbs.

Her symptoms were much alleviated by her voyage to England; the hands and the feet were better and the right hand and left foot alone retained some degree of swelling, with occasional pains. Another circumstance interposed to afford her relief, she became pregnant, and was safely delivered of a fine healthy boy in January, 1864.

She remained pretty well after her arrival in England until August, when she was attacked with neuralgic pains; the pains began in the right arm, and were somewhat severe, then they extended to the back of the right hand, afterwards to the back of the neck and feet, and then became diffused over the whole body. This attack of neuralgic pains was accompanied with rigors and general feverishness. It lasted a fortnight; on the two last days she had a severe pain in the right side, which was ascribed to the liver, and then the pains ceased entirely; she felt well, but somewhat debilitated. She had previously been subject to frequent fits of sneezing, which had now abated; she ess thirst, the maculæ were fainter, and the bulk of the limbs omewhat reduced.

the early part of December, having been unusually well since ttack in August, she suffered pain in her right hand; after a few a blister formed suddenly over the painful part, and broke; it d several times, and then the skin healed.

the 29th of January, the lady was confined, and she remained ut pain or uneasiness of any kind until the 25th of February, a severe neuralgic pain occurred in the left foot; after a few a blister suddenly appeared over the painful part; it broke, and refilling a few times disappeared. A month later, she experi-l neuralgic pains in the right hand and left foot at the same time; nkles of both legs were painful and swollen, the legs up to the tender to the touch, and the soles of the feet œdematous and sen-. These symptoms were succeeded by a blister on the hand and er on the left foot, followed as in previous instances by relief pain. A similar attack of swelling and pain occurred in the and nearly three months later, namely, in June, and was at-d with similar relief.

this period the hands were both somewhat swollen and stiff, times cold, and sometimes benumbed; the fingers were taper in e, and the skin stained of dark purplish-brown. But the diges-organs continued normal, her spirits were only occasionally de-ed, and she regarded her health as good. The time had now ed for her return to India with her husband, his furlough having red. Since that event, we are informed that she was confined for econd time, and died at the latter end of the year 1865 of some s incidental to childbirth.

ASE 10.—ELEPHANTIASIS ANÆSTHETICA; *in a native of Hindostan; lgia; anæsthesia; ulceration; fever; albuminuria.*

young lady, aged nineteen, a native of Hindostan, became the ct of anæsthetic leprosy at the age of fourteen. The disease e its appearance as an elevated œdematous semi-transparent blotch e middle of each cheek. The blotches gradually increased in while other blotches were developed on the forehead, and on the inent parts of the ears. These blotches were in the first instance itive, subsequently they lost their sensibility. At the same time or soon after the appearance of the blotches on the face, raised hes and flat maculæ of a dull red color occurred upon the body limbs, the hands and feet became somewhat swollen and œdema-and of a darker color than the rest of the skin.

ncurrently with the development of the maculæ and blotches, she red from occasional attacks of pain in the lower limbs, the loins, he chest. These pains were in some instances excited by cold s, but after a time, it was found that the skin of the legs and feet ost its normal sensibility. Hot fomentations with mustard, in-d to relieve the pains, occasioned blisters, without being felt by atient, and one or two indolent and insensible ulcers were pro-l, which healed with difficulty, and are apt to reopen from time ne.

The mucous membrane participates in the general physical disorder; the conjunctivæ are streaked with enlarged venules; the membrane of the nares has lost its sensibility to strong odors; she has frequent attacks of sore throat, and her voice is weak and hoarse. Menstruation, likewise, is deficient and irregular; she is losing her hair; she is dull and listless, and indisposed to exertion or amusement.

This young lady first came under our notice in May, 1865; in the subsequent autumn she was attacked with febrile symptoms, which were at first continuous, and afterwards intermittent; the febrile symptoms lasted about two months, and were accompanied with albuminuria. She was much reduced by this attack, was debilitated and thin, but her appetite returned and continues as good as usual.

CASE 11.—ELEPHANTIASIS ANÆSTHETICA; *apparently resulting from venereal infection by a leprous woman; insidious advance of the disease; neuralgia; smart fever; resemblance to syphilis; severe mercurial treatment; progressive anæsthesia.*

A young medical officer of the Indian Army (J. E. L.), aged twenty-three, born in Ferozepore, of English parents, always enjoyed good health, with the exception of an attack of intermittent fever in 1854 which lasted four months, until four years back, when his present illness commenced. His parents, with two brothers and one sister, have excellent health; from his infancy he was somewhat darker in complexion than his brothers and sister, but during the last few years, and especially during the last twelve months, has become swarthy, and at present is darker than a native, the swarthiness not being limited to the exposed parts of the body, the face and hands, but pervading the whole skin, and being greatest on the lower limbs, and especially on the legs and feet. His hair, originally somewhat curly, is black and straight, the eyebrows also black, and he has a small moustache and beard of the same color, but no whiskers.

In the month of August, 1861, he had a soft, sloughing, venereal sore upon the corona glandis, for which he was treated very actively with mercury, and severely salivated. At the commencement of his treatment he took two grains of calomel every two hours, and continued a modified mercurial course for four months, by which time the sore had healed. After the healing of the sore he had some congestion of the fauces, which yielded to a gargle, and passed away in a few days.

On the 7th of March, 1863, having remained well since 1861, he again had a venereal sore, this time a hard chancre on the exterior of the prepuce; he treated the sore himself by local means, dusting it with calomel, and keeping it moist with black wash; it healed in three weeks, but has left a cicatrix of considerable size.

On the 16th of April, nineteen days after the cure of the hard chancre, he had his attention called by some companions with whom he was bathing, to a spotted state of his skin. The spots were circular in figure, of a reddish-brown color, and dispersed over the trunk of the body, some few being visible on the forehead. The spots gave him no uneasiness, and no further attention was paid to them.

In the month of October following he experienced shooting pains n his limbs; they were occasional, not severe, and deep seated, seeming to him to be fixed in his bones.

In December an additional symptom of his disease, namely, a puffy swelling of the hands, was first noticed; and this, like the spots, not by the patient himself, but accidentally by a companion. The swelling was unattended with pain.

In January of the following year, 1864, the appearance of his face attracted the attention of his superior officer while on parade, and he was ordered to his quarters by the Deputy Inspector-General of Hospitals, under the impression that he was laboring under symptoms of secondary syphilis. He had no feeling of illness, and was not aware of any symptoms of disease, beyond the spotted appearance of the face already adverted to, and which at this time had been in existence for nine months, latterly somewhat more conspicuous than at first. Being now put upon the sick list for supposed secondary syphilis, he was ordered three grains of iodide of potassium in decoction of sarsaparilla thrice daily. After a month, as no impression was made upon the spots, the dose was progressively increased to eight grains three times a day, and with a similar result; he besides took a warm bath, containing chlorate of potash, every night.

Becoming tired of treatment, and experiencing no beneficial result from the medicine he had taken, and at the same time believing himself to be in good health, he obtained permission to remove to another station, and went to Cawnpore in medical charge of a military detachment, a nineteen days' march. On the journey he experienced considerable dryness of throat, debility, palpitations of the heart, loss of appetite, feverishness and sleeplessness at night, shooting and aching pains in his bones, drowsiness by day, and extreme depression of spirits; and these symptoms increased in severity after his arrival at Cawnpore.

Feeling at this time really ill, he demanded examination by a Medical Board, and appeared before the Board on the 1st of April, 1864. The maculation of his skin had rapidly increased after its first appearance, had spread over the whole body, and was accompanied with thickening of the integument. His conjunctivæ were reddened, as were also the fauces, but he had no feeling of soreness of throat and no ulceration of the mucous membrane. The deep-seated pains in his limbs had also somewhat increased; he was feverish, restless and sleepless at night, and languid by day, particularly in the morning; drowsy, and unequal to the exertion required by his duty; he had frequent attacks of palpitation and loss of appetite. To these symptoms were added, subsequently to this date, nocturnal emissions, sometimes occurring twice in the night.

The "case" of the patient was thus reported by the Medical Board: 'In April, 1863, he first noticed some copper-colored blotches on his ice and extremities; these have gradually increased, and now cover is entire body. Last October he was attacked with rheumatism, hiefly affecting the extremities, from which he has suffered more or ss ever since, and is now quite unfit for duty. I therefore recommend him for three months' leave, and that he be removed to the

General Hospital, Allahabad, for treatment. Treatment: hydrargyri bichloridi; potassæ iodidi; iron tonics."

He remained under treatment in the Allahabad Hospital from April until September, pursuing the prescribed treatment, varied at intervals with mercurial fumigations, nitromuriatic acid, quinine, and arsenic. He states that he felt more unwell at the end of this period than he did at first, and he again went before a Medical Board. The report of the Board recapitulates the occurrence of primary syphilis, followed by secondary syphilis; "on admission in April last his body was covered with a copper-colored eruption, the eruption being attended with considerable thickening of the skin in the part engaged; he suffered a good deal from nocturnal pains, and at a later period from sore throat. His general health was also in a bad state, and during the past hot season he was much debilitated. Latterly he has suffered from nocturnal emissions and palpitation of the heart." "The eruption is very much better now, and he is in better health, but he still remains considerably debilitated and hypochondriacal, a state which the nocturnal emissions tend to keep up. As I believe that Mr. —— requires a complete change of climate and a sea voyage for the recovery of his health, I recommend that he be permitted to proceed to England on medical certificate," &c.

In November all medical treatment was given up; he sailed from India in January, and reached England on the 18th day of May. Arrived in London, he put himself under the care of an eminent hospital surgeon, who took the same view of his case as his medical advisers in India. He was fumigated with calomel until his gums became sore; and making no progress, was seen in consultation by another surgeon distinguished for his knowledge of syphilis. He had now been three months in London; the diagnosis was still syphilis, and it was agreed in consultation that he should go to the sea side for awhile to regain his strength, and on his return to London that he should be thoroughly mercurialized. Having so recently had a sea voyage without any profit to his health, the patient preferred an inland place, and went to Malvern, where for a short time he was submitted to hydropathic treatment.

Such was the state of the case on the 4th of September, 1864, when the patient addressed to us a letter, from which the following is an extract: "I have been suffering from constitutional secondary syphilis for the last two and a half years; my body is entirely covered with large copper-colored blotches, attended with considerable thickening of the skin, and my general constitution is extremely shattered." A few days afterwards he presented himself before us, and we perceived at once that he was suffering under elephantiasis.

By a fortunate coincidence, Dr. Böeck, of Christiania, celebrated, in conjunction with Dr. Danielssen, for his researches on Elephantiasis Græcorum, was at this time a visitor to London, and we were glad of the opportunity of obtaining a corroboration of our diagnosis by so eminent an authority. He recognized the nature of the case immediately, and determined one symptom of the disease, namely, incipient anæsthesia, which we had overlooked.

This case is peculiarly instructive, and especially on account of its association with syphilis. It is an evidence of the independence of the leprous poison and the syphilitic poison, and it illustrates powerfully the resemblance which exists in the constitutional manifestation of the two diseases. It is interesting, also, as regards the origin of the complaint; the woman with whom the patient cohabited in 1861, and from whom he received his first syphilitic infection, being a leper; and it goes some way to fix the period of latency of the disease at two years. Let us review the leading symptoms: taking them in the order of time, the first that showed itself was the outbreak of maculæ on the skin; then followed congestion of the mucous membrane of the fauces; thirdly, neuralgic pains; fourthly, nervous prostration; and fifthly, anæsthesia. The whole case, it must be remembered, is in its infancy and an unusually favorable opportunity is offered by it of observing the incipient symptoms of the disease, and watching their progressive development. These circumstances must also be borne in mind in judging of the universal acceptation of the case as one of syphilis by the medical men under whose observation it came. Our own opinion is, that there was no combination of constitutional syphilis with the disease in chief, and that the symptoms were from the first the ordinary symptoms of development of elephantiasis. And their resemblance to the constitutional symptoms of syphilis is, as we perceive, so close, that they must necessarily be taken for syphilis by every medical man who has not had the opportunity of separately observing and studying elephantiasis.

We must here remark that our patient had received a medical education and training in the hospitals of India, in which many native patients were received; but he never saw an instance of elephantiasis, and no suspicion had ever crossed his mind, until we pronounced our diagnosis, that his own case was other than syphilis. This will explain also the opinion of the numerous medical officers by whom he was examined in India, and it serves to prove that elephantiasis, however common on the coast, is by no means frequent in the interior of Hindostan.

Recurring to the symptoms of elephantiasis as manifested by the present case, it will be convenient to take them in the following order, namely: the skin, the mucous membrane, the nervous system.

The remarkable swarthiness of the skin was very striking. A photograph of a sister of the patient showed that the family tint of complexion was not deeper than is to be seen daily amongst ourselves, and yet the color of this young man was darker than that of a native Indian. He had always been darker than his brothers and sister, but the extreme swarthiness of his skin had only been developed during the last year or two. The swarthiness of color was most remarkable in his lower limbs, beginning in the thigh and increasing in depth ownwards to the foot. Moreover, the left foot was deeper colored han the right, and the end of the great toes was somewhat bleached, owing a tendency to *leuce*. The hands were also deeper in color an the arms, and there was a certain leaden and metallic hue of the in of the hands and also of the face.

The *maculæ* were dispersed chiefly on the forehead and on the trunk of the body, producing a mottling of the skin. They were circular in figure, of a size varying from a quarter of an inch to several inches in diameter, and of a reddish and yellowish-brown color, not strictly copper-colored, of which the predominant tint is red, but having a duskier and more melasmic hue. They were, in fact, the representatives of the *melas* of vitiligo and lepra. Some of the smaller and more recent maculæ had a ruddy glow, marking their origin in erythematous congestion: while others, of longer standing, were more decidedly melasmic. A later period would probably be indicated by a total loss of color, a true *leuce*, and its accompanying anæsthesia.

The next character evinced by the maculæ is a certain degree of thickening of the integument from infiltration; several of the maculæ on the forehead were thickened to the extent of producing a slight degree of prominence, but there were no tubercles. There was also some degree of thickening of the integument of the dorsum of the hand; and wherever the maculæ were pinched up between the fingers a thickening of the integument could be detected. In association with the thickening of the integument is a dilated state of the pores of the skin, which gives it a coarse appearance; and when the infiltration is carried a little further, and the maculæ become œdematous, the elevated surface has a degree of semi-transparency, that suggests a resemblance to the outer covering of brawn. Sometimes the dilated follicles exude a greasy secretion, at other times they are dry. The general surface of the skin of our patient was dry, more particularly the head and the lower extremities. When, at our request, he took a Turkish bath, he found that, although the trunk of the body perspired profusely, there was no moisture on the wrists and hands, and none upon the legs below the knees; the thighs perspired slightly. The non-perspiring regions of the body were those which were also the most remarkable for swarthiness; and on the legs the pores were dry and prominent, and filled with cuticular exuviæ, and there existed a slight degree of desquamation of the epidermis.

The state of the skin in general is one of abnormal innervation and defective nutrition. Abnormal innervation is shown in the tendency to erythematous congestion which is generally accompanied with a heightened sensibility of the skin, and the lowered sensibility which follows in the melasmic, and especially in the leucasmic stage. Our patient complained of heat and tingling in the soles of the feet, while the legs above the ankle were shown by the needle, as used by Dr. Böeck, to be in a state bordering on anæsthesia. Defective nutrition of the skin was evinced by the suspension of perspiration on the legs and hands, by the dryness of the legs, by an unhealthy ulcer on the metatarso-phalangeal joint and heel of the left foot, and particularly by the loosening and casting of the nails of the feet. The root of the nail of both great toes could be lifted from its bed, and the body of the nail was in course of separation from its matrix. The ulcer had arisen from pressure during his march from Ferozepore to Cawnpore in March, 1864, and, in consequence of deficient vitality, exhibited no disposition to heal.

The prominent blotches on the forehead gave a sombre character to his countenance, not as yet approaching the leonine expression of tubercular elephantiasis, but a heaviness that heightened the gloomy, listless, and melancholy expression of his face. There was no thickening of the lobes of the ears, and, although he had lost a considerable quantity of the hair from his head, it was still thick and abundant, and there was no loss of the eyebrows.

In elephantiasis the mucous membrane very early participates in the surface congestion of the body; the conjunctiva in our patient soon became injected, as did the mucous lining of the nares, the fauces, and the larynx. In advanced stages of the disease the mucous membrane becomes thickened, and subsequently is apt to ulcerate; but at the early period of the present case the affection of mucous membrane had not advanced beyond congestion. The patient's appetite and digestion had remained good throughout the progress of the disease, with the exception of the acute period of the attack which he experienced during the march to Cawnpore.

He remarks that he has a feeling of soreness in his nose, and the nostrils are always more or less stuffed. He has uneasy sensations in his palate, which he compares to some object projecting into the cavity of the mouth; he has a similar sensation sometimes in the fauces, with a sense of soreness extending to the ears, and some degree of hoarseness of voice. He complains of having lost the vocal power of his larynx. Before this illness he was a good singer, with a powerful voice; now he cannot utter a note. He also speaks of a feeling of dryness in the throat and of a fetid state of the breath; sometimes the odour of the breath has a sickly sweetness, like almonds, and at other times is, to his own appreciation, excessively offensive. Dr. Morell Mackenzie examined the patient's throat with the laryngoscope, and reported him to be "suffering from slight chronic congestion and follicular disease of the mucous membrane of the larynx, but with nothing of a specific character about the affection."

The nervous sensibility of our patient, as is common in elephantiasis, partakes of the double character of hyperæsthesia and anæsthesia; the former belonging to the period of invasion of a febrile state or exacerbation, the latter to the decline of such an attack; while the mental powers of the patient are depressed and lethargic. Thus, while the soles of the feet were hot and sensitive, the legs, as was first remarked by Dr. Böeck, were anæsthetic. At a later period the sensibility of the fingers and feet is reduced, and they are remarkable for their coldness; our patient declared that he could pick up a small object like a needle or pin with his fingers; but on the following day he informed us that he had lost the power of his wrists, and could not unfasten the straps of his portmanteau without great difficulty; he also complained of inability in buttoning the collar of his shirt.

The deep-seated pains which he referred to his bones were very little changed during the first two years of his illness. Since that period they have increased, and other abnormal nervous sensations have been added. The original pains occupied the limbs, particularly the legs, the cartilages of the ribs, and the region of the sternum; but latterly he has complained of a "peculiar throbbing nervousness of the whole body, a trembling nervous sensation, and frequent attacks of palpitations. These nervous feelings destroy his sleep, and his flesh is so tender that the slightest pinch is productive of pain. He has also had recently severe pains in his loins, and great general debility.

CASE 12.—ELEPHANTIASIS ANÆSTHETICA; *mistaken for secondary syphilis; severe treatment with mercury and iodide of potassium; aggravation of the disease; anæsthesia; febrile attack; apparent recovery.*

A physician, aged seventy, one of the chiefs of the Bengal Medical Establishment, having resided in India forty years, and, with the exception of some mild attacks of hepatic disorder, having enjoyed remarkably good health, was attacked with symptoms of anæsthetic leprosy in 1849, in the sixty seventh year of his age. He states that in the summer of 1850, while in Malta, he became aware of an occasional weakness in walking, and a benumbed sensation on the outer side of the right foot. Later in the year, an erythematous blotch showed itself at the seat of the numbness, and, when moving the foot, was attended with a prickling sensation and a feeling of tightness, as of a wire fastened around the part. In 1851, similar phenomena occurred in the left foot, and several erythematous spots appeared on the right leg. The spots were of a dusky red color, rough, and dry on the surface, tender to the touch, and accompanied by a feeling of tightness. A few months later, the feet were very tender, the prickling sensation was more general, and the tightness on progression extended higher up the leg. While these changes were in progress, he began to experience a sensation of numbness on the side of the metacarpo-phalangeal joint of the middle finger, and observed a patch of redness on the next joint. In the month of January of the following year, there was an evident numbness of the little and ring-finger of the right hand.

Up to this time he had not been troubled with any constitutional disorder, but, about the middle of January, 1852, he was seized with sickness of stomach, and, a fortnight later, with a smart attack of fever, accompanied with excessive sweating, the latter symptom sometimes coming on without being preceded by the usual hot stage. He was treated with quinine, and the fever quickly gave way. At the end of eight days he was well; but on the third day of the fever, and during the hot stage, two large, livid, œdematous-looking blotches, which he described as blebs, suddenly made their appearance on the outer border of the left wrist. After the subsidence of this febrile attack, the sensibility of his fingers gradually returned. In June he had a second attack of fever, which lasted eleven days, being preceded by sickness; on the ninth day of the fever the numbness returned, but disappeared on the eleventh day. In July there was a third febrile attack of the same kind, accompanied with a burning sensation, pain, and soreness of the outer border of the feet, increased numbness of the ring and little finger of the left hand, redness of the knuckles, pain on exposure to the slightest cold, and the development of a hard and inflamed swelling just above the inner condyle of each upper arm, in the situation of the supra-condyloidean lymphatic gland. During the month of August the disease continued steadily progressing; raised spots were thrown out on the face; erythematous spots and blotches appeared on the abdomen and limbs, being preceded by itching and smarting. In September there was a still further increase of the disease, the whole forehead was studded over with elevated spots; there were erythematous spots within the mouth, and hard tumors developed in the subcutaneous cellular tissue of the forearms and back of the wrists. The three following months of the year witnessed a progressive advance of the disease in every way, with increased insensibility and lividity of the fingers and feet.

In January, 1853, numerous large blotches made their appearance on the back of the thighs, and several of those already in existence threw out a broad erythematous areola around their circumference, which gave them an annulated appearance, dark, and almost livid in the centre, and bounded by a crimson band. In April, after a hot bath of the temperature of 104°, the face was flushed and spotted over with erythematous blotches of a vivid red color, the redness of the spots on other parts of the skin increased, and they became prominent from œdematous infiltration, while those which were already prominent were enlarged. The symptoms now assumed a progressive character; in the beginning of May there was inflammation of the left hand and œdema of the right ankle, with a sensation of extreme cold, although the part was hot to the touch. The face remained congested and swollen, the features were enlarged, and the natural wrinkles of the skin deepened; the alæ of the nose were remarkably distended, and hard knots could be perceived as well as felt under the skin, at the outer angle of the eye, upon the temple, and upon the ears. Inflammation now appeared in the right hand, and the fingers became swollen and painful, like those of the left. The deranged sensations of cold and pain continued in the legs and feet, spots showed themselves on the palm of the hands, and the œdema, which had increased in the patches, was now apparent in the lower eyelids.

The preceding narrative of the case is drawn from a journal kept by the patient himself, and at the conclusion of this period, namely, on the 25th of May, 1853, he first came under our observation, his state being much aggravated, and the disease accelerated, as he believed, by the treatment which had been pursued, and which consisted of arsenic, in large doses, for seven weeks; then iodide of potassium, at first alone, and subsequently with arsenic, for another term of seven weeks; then iodide of potassium, arsenic, and bichloride of mercury, all combined, for three weeks, until the gums became tender; next, the bichloride of mercury with sarsaparilla, for seven weeks; and lastly, two grains of blue pill night and morning, to keep up tenderness of gums, in addition to the bichloride of mercury and sarsaparilla. It was after this severe course of treatment, extending in time from August 13, 1852, to April 20, 1853, that we first saw him.

The history of the patient, while under our care, was one of a progressive advance of the disease, both in eruption and reduction of sensation, until the month of August, when a state of extreme dulness, heaviness, and lethargy came on, accompanied with febrile symptoms, and continued for several weeks. From this attack he gradually recovered, and two months later, had regained strength, appetite, and power of applying his mind to reading. The œdematous spots and blotches on various parts of his body were becoming smaller; many of the brown-colored spots were fading; and there was a slight increase of power over the muscles of his hands and lower limbs. He could walk across the room with the aid of a servant, and had some feeling in his feet; but his hands were still very sensitive to the influence of cold, and he was obliged to continue the use of warm gloves to protect them.

The nephew of this gentleman, himself a physician, reporting the patient's state of health in March, 1855, observes: "By using the warm salt-water bath, and residing some months on the sea coast, he so far regained the strength of his limbs that he was able to walk a mile alone, and no appearance of spots was visible, with the exception of a few upon the abdomen." The patient had no return of the symptoms of leprosy, but died a few years afterwards of ordinary bronchitis.

CASE 13.—ELEPHANTIASIS ANÆSTHETICA; *insidious invasion and progress; absence of neuralgia; anæsthesia; fair general health.*

A fine healthy-looking man (Mr. E.), a merchant of the Mauritius, where he had resided twenty-nine years, became aware, at the age of forty-seven, of the presence of elephantiasis. There is reason to believe that the disease had already existed in a latent form, probably for some years, for his first notice of being affected was the discovery that his arm was insensible to the accidental aspersion of boiling water from the spout of a teakettle. His wife is a remarkably fine woman, a native of Mauritius, and, with his children, five in number, enjoys perfect health.

His medical man reports that when he first saw the case there was a croup of small, round, tubercular elevations, of a darkish-red color, sprinkled over the arms and neck; and that subsequently the blotches increased in size and number, and made their appearance on the trunk and face. His general health "both then and since remained unaffected;" but as the disease resisted treatment, and resembled in its manner of origin the leprosy of the country, it was thought desirable to send him to England, "where the disease with which he was menaced is unknown."

At his appearance before us the patient declared that he felt as strong as ever in his life, that he had no pain, and was not sensible of any inconvenience of any kind beyond the appearance of the prominent blotches, and a knowledge of the presence in his system of a serious disease. His face presented a not unhealthy looking reddish-brown tint, his hands and feet were deeply bronzed; and there was an obvious insensibility of the skin of the hands and arms.

CASE 14.—ELEPHANTIASIS ANÆSTHETICA; *eight or nine years' duration; neuralgic pains; anæmia; debility; atrophy.*

In February, 1866, we were consulted by a gentleman (Mr. B.), aged fifty, but having the appearance of sixty. He was tall and of large frame, thin and languid; walked somewhat feebly, and, dropping into a chair, gave utterance to a sigh of exhaustion. On his cheeks and forehead were several large, slightly raised, and brownish blotches, which at once centred our diagnosis on elephantiasis. His face and conjunctiva were pallid, the former having a delicate lilac tint; the backs of the hands were somewhat swollen, the wrists puffed, and the skin marked by a brownish blotch.

Our first remark to him was, "You have resided in the East Indies." "No," he replied, "in China." On removing his clothes, which he was too listless to undertake himself, but accepted the assistance of a friend, we found the feet and ankles puffed and swollen like the hands. On the feet and legs were several brown patches; the cuticle of the legs was fissured and desquamating; but the most remarkable symptom of the disease was emaciation of the legs, apparently from muscular atrophy. We pricked the skin of the legs a few inches above the ankle, without exciting sensation; and, to our question if he felt pain, his answer was that his feet and legs were benumbed. On proceeding higher, we found brown marginate blotches on the thighs and on the trunk of the body; these melasmic blotches were all insensible to the prick of a pin, and his skin and muscular system betokened incipient atrophy.

Proceeding further with our inquiry, we found, in addition to the anæmic condition of the conjunctiva, obstruction of the nares, from which mucus, streaked with blood, was occasionally expelled. The lips were thick, but there were no tubercles in the skin of the forehead, face, ears, or nose, and no evidence of congestion of the buccal membrane or fauces, although the voice was weak and somewhat hoarse.

In reference to his visceral system there seemed to be nothing abnormal; he passed urine seldom, and it had been analyzed, without any trace of disorder; he suffered slightly from hæmorrhoids, but his digestion was fair; and, but for an addiction to alcoholic stimulants, which weakened his appetite, his general health might be stated as good.

To the question of pains his evidence was less negative; he was much annoyed with shooting pains in his feet and legs; they were irregular and fugitive; began on the dorsum of the foot, and ran up the outer side of the legs, particularly the right, to the hip. He had not suffered pain in his hands or arms, and although his sleep at night was bad, the fault was not attributable to pains. The neuralgic pains were most troublesome in the evening, but not at night.

Looking to the puffed and somewhat œdematous state of the feet and ankles, together with the emaciation of his legs, his weak powers of progression were explained; and we noticed that he failed in his attempts to fasten the button of the collar of his shirt, and that the motive power of the hands was as feeble as that of his feet. With all the insensibility of the skin and of the extremities, however, he had had no vesication of the cuticle, no deep-seated rheumatic pains, and no threatening of ulceration.

Having determined thus far his pathological state, we in the next place proceeded to inquire into so much of his history as bore upon his malady. He had gone to Hong Kong in 1844, and resided there fourteen years, namely, until 1858. During his residence in China he had lived very freely, and in 1850 suffered from fever, for which he was mercurialized. For four years he had a Chinese mistress, but she was to all appearance well, and he had never had venereal disease of any kind.

The disease made its first external appearance in 1858 in the form of a red and slightly raised blotch on each cheek, and has therefore very probably been nine or ten years in existence. The insensibility and numbness of the skin and limbs he noticed first in 1862. Latterly the tips of the fingers have become pale, and their numbness has increased. In the month of August, 1866, the following notice appeared in the obituary of the *Times:* "On the 4th inst., suddenly, W. A. B., late of Hong Kong, China, in the 50th year of his age."

CASE 15.—MIXED ELEPHANTIASIS; TUBERCULOSA and ANÆSTHETICA; *loss of voice; distortion of limbs and joints; ulceration; death after a course of ten years.*

The elder brother of the young gentleman whose medical history is reported in CASE 2 was attacked with elephantiasis at the age of thirteen, and died at twenty-three, the duration of the disease being ten years. The exanthem was first noticed on the face in the form of spots; the features were pale and bloated; the eyebrows fell off; he had no whiskers or beard, and he subsequently lost the hair of the pubes; the nails also broke away from their matrices, and were not reproduced.

The mucous membrane of the nares was severely affected, morbid secretions accumulated on its surface, the nasal bones and cartilages gave way, and the nose became flattened. His voice was weak and hoarse, he had difficulty in making himself heard, and was troubled with an occasional cough. His appetite also was defective.

He had ulcers on various parts of the skin, and had lost a phalanx from the little finger of one of his hands, the rest of the fingers were bent in different directions, and the hands distorted. He was unable to use his hands, and was incapable of walking. His spirits were greatly depressed, he was subject to fits of extreme despondency, and suffered severely from neuralgia.

The number of cases falling under our notice in 1865 was five, four males and one female; and in 1866 the number was similar, with the same proportion of males and females. The cases of 1865 and one of 1866 have been narrated, and we now proceed to subjoin a brief notice of those that remain. The youngest patient (G. E.) was a boy, born in Calcutta, twelve years and a half old, the son of European parents; his mother was born in Shandagore; his father had resided in India fifteen years. Of three children, the present is alone affected with this disease. Between three and four years back while in Rungpore, a marshy and unhealthy district, he was seized with intermittent fever with sore throat, and these attacks were repeated from time to time until his voyage to England, two of the attacks occurring on board ship. He has now been in England nearly three years, and has experienced no further inconvenience from the fever. Four months back, it was observed that a number of yellow brown stains were apparent on several parts of his body, and shortly afterwards were followed by pimples on the face, and a tawny discoloration of the skin. The spots or stains vary in size from two to four lines in diameter, and are deepest in color in the centre, fading at the circumference; they are most abundant on the shoulders and shoulder blades, on the front of the neck, along the lower border of the pectoralis major, on the front of the upper arm, along the line of the ilium, and upon the back of the thigh down to the ham, the rest of the body is comparatively free; there are none on the front of the chest and abdomen, and none on the legs below the knees or on the feet. The papulæ are most abundant on the face where there are three measuring 3/8ths of an inch in diameter, two measuring 2/8ths, while the rest have an average diameter of 1/8th; they are brownish and transparent, and seem to be composed of a gelatinous tissue, traversed by a few scattered venules. The papulæ are also numerously scattered over the back of the upper arm, the whole circumference of the forearms, the buttock, where they are large and prominent, and the legs. There is also a slight degree of œdema of the hands, and a granular and somewhat congested condition of the tonsils. In other respects, the boy is in good general health, but seems to evince a little lethargy and dulness of manner. He has no anæsthesia, has had no neuralgic pains, and, as is apparent, the disease is in its first stage of development. He was sent to us for an opinion as to the treatment of an obstinate acne, to which the papulæ were supposed to appertain.

The next patient (C. K.) was a boy of sixteen, born in Gwalior, of English parents, his mother having been born in India; he has one brother and four sisters, all of whom are well. Previously to leaving India a year ago, he had intermittent fever with sore throat, but from this he has quite recovered, and he appears, with the exception of a slight degree of anæmia, to be in good health. He is somewhat dull in manner, indisposed to activity, but in other respects would be regarded as a robust healthy-looking boy. His application to us had reference to a circular spot three inches in diameter which had shown itself on the left side of the trunk of the body just below the scapula, and had been taken for a ringworm. The spot consisted of a circular band three-quarters of an inch in breadth, inclosing an area of about two inches in diameter. The color of the band was a bright red-brown or copper hue, dotted with puncta of a deeper tinge, corresponding with the apertures of the follicles, while the tint of the area was a faded yellow-brown. There was no infiltration, and consequently no prominence; the surface was smooth without desquamation, and the skin evinced insensibility when pricked with a pin. Further examination discovered a second and similar spot on the ulnar side of the left forearm, three on the right leg between the knee and the ankle, and a knotty thickening of the lower segment of the prépuce, accompanied with a slight œdematous infiltration. The maculæ on the leg were remarkable for their loss of sensibility, and presented a pityriasic desquamation of the epidermis. Up to the time of his visit to us he had not experienced pain, but a month later he had a severe aching and darting pain in the ulnar side of the left forearm, extending to the little and ring-finger of the same hand; the pains began at about four o'clock in the morning and prevented sleep, and were more or less troublesome during the day. This attack lasted five or six weeks, the pains gradually subsiding, but leaving behind them numbness and partial insensibility with a tendency to permanent flexion; no fresh spots were developed, and the older ones seemed to be fading. He had as yet no affection of the mucous membrane, and the tendency of the symptoms was evidently towards the anæsthetic form of the disease.

The third case was that of a young gentleman (T. C.), aged eighteen, born at Connamore, on the Malabar coast, of English parents, the father having resided in India from the age of eighteen, and the mother since that of fourteen. His mother reports that he was a fine infant, that he took vaccination favorably,[1] that he had measles as a child; but as he grew to the age of seven to nine he fell off in strength, and became weakly and delicate. At the age of ten he was sent to school in Ireland, where he was seen by a medical man for a cough; the physician reported him free from disease of the lungs, but weakly.

Between three and four years later he had an exanthematous fever, which was treated as scarlatina; it occurred in the summer, and during the holidays, and he was alone in the school, so that the existence of an epidemic at the time is not determined. Four or six months later, that is, in the winter immediately following the scarlatina, he began to experience tingling and pricking in the tips of the little and ring-finger of the right hand; the painful sensations then extended up the ulnar side of the forearm to just above the elbow; after a few weeks these unpleasant sensations ceased, and the affected skin, previously over sensitive, became benumbed and anæsthetic. After a few months, similar phenomena were observed in the legs; and quite recently they have commenced in the left hand and arm. He has had no acute pain, only the painful sensations already mentioned. One year back large pimples appeared on his face; and at the present time the face, and particularly the cheeks and chin, is sprinkled over with numerous large reddish-brown and olive-colored tubercles, intermingled with several brawn-like and infiltrated blotches; altogether there are about fifty tubercles on the face, ranging in size from half to three-quarters of an inch in diameter, with an elevation of a quarter of an inch; they are for the most part isolated, and have risen upon the disk of the maculæ; but some are clustered and form an irregular mass. A few are situated in the eyebrows and one on the eyelid, while the tip of the nose is red and tumid. A number of large irregularly shaped ochre-colored blotches are dispersed upon the limbs; and although there is an absence of the usual œdema of the back of the hands, the right wrist is purplish and puffy. The right hand is somewhat deformed from the loss of sensibility and incipient contraction of the little and ring-finger, and especially by a state of atrophy of the muscles of the metacarpal space between the thumb and forefinger; while on the ulnar border of the hand are two bullæ of recent origin, one collapsed and emptied of its contents, the other containing a small quantity of sanguinolent serum, and partially broken, exhibiting at its base a superficial asthenic ulcer like that of a broken chilblain. Bullæ first made their appearance six months back, and there is evidence of the remains of a bullous eruption and the thin dry crusts of superficial ulceration in the neighborhood of the right elbow, the circumjacent skin being thin, purplish, and somewhat livid. In his countenance there is less of the melancholy, frowning, and leonine expression common in tubercular leprosy than usual; the eyebrows are thin, and he is beardless and whiskerless. The conjunctivæ are unaffected, but there is some obstruction of the nasal passages from swelling of the mucous membrane; the fauces are red, and there is a deep redness of the palate. He is tall, moderately full in the face, but emaciated in body and limbs; eats and drinks well, but is drowsy during the day, and awakes in the morning with headache, whilst twice in the week he is much tormented with headache during the day. His mother wished to take him back to India, but although he has been eight years at school he is so little advanced in his studies that she determined to leave him longer: and she was naturally shocked on seeing him, after so long an absence, with his face deformed by tubercles and prominent brown blotches; but she had no suspicion of the nature of the disease, having never seen anything like it in India. She informed us, moreover, that her daughter, aged twelve, is suffering under enlargement of spleen, the sequela of malarious fever.

---

[1] There is only one imperfect cicatrix of vaccination to be discovered on one arm, and none on the other.

The fourth case was that of a lady (Mrs. M.), aged fifty-five, who had resided in India from the age of eight, and for the last thirty years in Bombay close to the sea. The disease commenced at the age of forty, just fifteen years back, and began with disorder of the abdominal organs and swelling; the swelling lasted for a day and a half, and was followed by the appearance of pale brown maculæ on the face, hands, lower extremities, and feet. At the present time she is infirm from weakness of the muscular system; her face is of a tawny color, nodulated and flabby; the hair of the front of the head, the eyebrows, and eyelids gone; the corneæ opaque, the nose flattened from sinking of the bones, the alæ of the nose everted, the nares obstructed, the cavity of the mouth pale and mottled, and the soft palate contracted and pinched up. But the most striking feature of her appearance is the mutilation and distortion of her hands; the fingers are flexed backwards, and the little and ring-finger altogether distorted from their natural position,[1] they are livid and cold. The arms are flabby, and the skin mottled with brown and purple; the legs have a similar character, but are not so much affected as the hands; and the feet, which are purplish and cold, are less distorted. She complains much of suffering with chills and heats, and during the night with a raging burning heat of the whole body, which she compares to being baked. These symptoms are not constant; sometimes her suffering proceeds

---

[1] *Vide* a rude sketch of the left hand at page 527.

pain, but a month later he had a severe achi
the ulnar side of the left forearm, extendin
finger of the same hand; the pains began at
morning and prevented sleep, and were m
during the day. This attack lasted five
gradually subsiding, but leaving behind th
insensibility with a tendency to permane
were developed, and the older ones seem
yet no affection of the mucous membra
symptoms was evidently towards the ana

The third case was that of a young ge
born at Connamore, on the Malabar
father having resided in India from
mother since that of fourteen. His
infant, that he took vaccination fa
child; but as he grew to the
strength, and became weakly an
sent to school in Ireland, whe
cough; the physician report
but weakly.

Between three and four y
which was treated as sc
during the holidays, and
ence of an epidemic at
months later, that is, in
tina, he began to exp
little and ring-finge
extended up the ul
after a few weeks
skin, previously
After a few mor
and quite rece
He has had n
tioned. One
the present
sprinkled o
tubercles, i
altogether
from hal
of a qua
risen up
an irreg
the eye
large
the li
the b
right
inci

and

based on the
resembling diseases
l. Its most positive
namely, exanthematous
m, elevation in tuber-
the pallid and bloated
ation, and the fall of the
pression in the countenance
heaviness of the brow, the
and prominence of the ears,
of the nose, and the hoarseness

r leprosy are the elevation of the
into small prominences or tuber-
ne of the eyebrows, upon the nose,
f the tubercles are dispersed, some
tubercular masses; while the entire
ened, and tubercular nodules, not as,
e felt in the skin. The alæ of the
d expanded, the voice is guttural from
hoarse from thickening of the mucous
imes the heavy, nodulated, hairless brow,
expression to the countenance; hence the
and the leonine resemblance is increased
nostrils, the flattening of the nose, and a
and spreading of the lips. At other times,
eep-red hue from varicose distension of the
own tint from melasmic pigmentation. When
produced at the upper angles of the forehead,
ding horns, when the ears are enlarged and elon-
gthened and tuberculated, the face hairless, the lips
ent, and the voice hoarse and indistinct, a picture of
that came under our own observation, we are reminded
the painter and of the poets, and are enabled to com-
her synonym of the disease, namely, *satyriasis*.
ing characters of the anæsthetic form of the disease are
hematous and maculated state of the skin, the presence of
and transparent blotches on the face and forehead, or dis-
ver the body; the melancholy expression of countenance;
ested eyeball; the hoarse and weak voice, resulting from loss
of the muscles of the larynx; the anæsthesia of parts of
n: and especially the complaint of erratic and fugitive pains
skin and in the limbs. Then there is the negative sign: the
the skin and of tubercular thickening and its consequent deformity of
ature and appearance. Possibly, beyond the dejected expression.

tches somewhat prominent and semi-
may be nothing in the countenance
ase.

most important signs in both
ic pigmentation, the ema-
muscles, and especially
he wrist; then there is
ng of the tips of the
nd not unfrequently
ion. The feet ex-
more conspicuous
just above the ankles.
mbs the signs are for the
affection, bearing in mind a
œdematous infiltration, and to
in the tubercular variety of the com-
y, moreover, nodosities may be discovered
aneous nerves, and thickening of those nerv-
e the ulnar, approach most nearly to the surface;
s are more common than in the tubercular variety.
with which elephantiasis is most apt to be confounded
syphilis, rubeola, roseola, and chloasma. The resem-
condary syphilis is so striking that an error is certain,
on the part of those who have had the opportunity of seeing
erving leprosy; and the liability to error is the greater when
sease has followed or is complicated with syphilis. There is
exanthema, having frequently the yellow and brown-red tint that
es by the name of copper colored; the congestion of fauces, the cachectic and sordid skin, and the neuralgia, which is common to both; and it is only the history and circumstances of the case, and the lapse of time, that can determine with precision to which the disease really belongs. An important element of diagnosis is obtained also from treatment; the remedies, namely, iodide of potassium and mercury, which act beneficially in syphilis, are injurious in elephantiasis; the exanthema of the former they remove, the exanthema of the latter they increase and aggravate.

We have met with an instance of elephantiasis in the commencement of which the patient was attacked with an exanthematic fever, to all appearance identical with rubeola; but the eruption which then appeared upon the skin has remained permanently, and there is good reason to believe that the exanthematic fever was not rubeola at all, but an exanthematic febrile attack of elephantiasis. Similar observations have been recorded by others, and possibly admit of a parallel explanation.

It may also be observed as a commentary on the diagnosis of elephantiasis, that there is probably no disorder in the whole category of diseases of the body so remarkable for variety of characters, a variety which entitles it to be considered as a pathological paradox; for example, it is black, red, tawny, and white, according to the constitution of the patient and the form or period of the disease; it is hyperæsthetic and anæsthetic; hypertrophic and atrophic, and it is moist and dry; to which series of opposite characters may be added the broad line which separates the constitutional from the local affection, and which has led to so much perplexity; which induced Celsus to treat of these conditions as different diseases, and which enabled Moses to select the cutaneous manifestation of the disease as a means of diagnosis of the leprosy of the Hebrews.

In connection with the diagnosis of the true leprosy or elephantiasis Græcorum, it will be interesting to peruse the Scriptural account of the disease, contained in the thirteenth chapter of Leviticus, and so frequently referred to by medical writers. The following appears to us to be a correct interpretation of this important chapter, so far as it treats of the distinguishing signs of leprosy:—

1. And the Lord spake unto Moses and Aaron, saying,

2. When a man shall have an eruption in the skin *like* the eruption of leprosy, be it a rising (saat, Heb., ουλη, LXX.), a scab (saphat, Heb., σημασια, LXX.), or a bright glossy spot (berat, Heb., λευκη, LXX.); then he shall be brought unto the priest;

3. And the priest shall examine the eruption, and if the hair growing on the infected skin be changed in its color to white, and if the morbid alteration in the skin sink deeply into it, and appear to involve the entire thickness of the skin; then the case is one of leprosy, and the disease is contagious.

4. If the bright spots be white, and affect only the surface of the skin, and the hair be not changed in color to white, then the priest shall seclude the patient for seven days;

5. And on the seventh day, if the spots remain as it was, and have not increased in extent, then the priest shall seclude him for seven days more;

6. And on the completion of another seven days, if the spot be somewhat dark, and have not spread, the priest shall pronounce the patient free from contagion; the case is one of simple *scab*.

7. But if the *scab* increase in size and spread, after he has been dismissed by the priest as free from contagion, he shall be again admitted to examination;

8. And if the priest find that the *scab* is still spreading, then he shall pronounce the case to be one of leprosy, and contagious.

9. When a man is affected with leprosy, he shall be brought to the priest;

10. And the priest shall examine him, and if he find the affected skin to be white and raised, and if the hair growing upon it be changed to white, and if there be an open sore [raw flesh] in the affected skin:

11. It is an old leprosy and contagious.

12. And if a leprosy invade the whole body from the head to the feet;

13. Then the priest shall consider, and even although the leprosy cover the whole skin, yet if it be all turned white [lepra alphos] he shall pronounce the patient free from contagion:

14. But if there be an open sore, then there is contagion;

For the open sore is a proof of contagion, and the case is a y.

Or if the sore heal, and the skin become white, the patient shall to the priest;

And if the priest be satisfied that the sore has healed and the s white, then he shall pronounce the patient free from contagion.

Even in the case of a *boil* (schechin, Heb., ελκος, LXX.), which led;

If there be a white rising, or a bright spot, white or reddish in

And the priest find the whole depth of the skin to be involved disease, and the hair to be turned white, it is contagious, a lep- oroken out of the boil;

But if there be no white hairs, if it be quite superficial, and what dark in color, then the priest shall seclude the patient for days;

And if it spread extensively in the skin, the priest shall pro- e it a contagious eruption.

But if the bright spot remain, and spread not, it is a *carbuncle* tash, Heb., a hot burning, κατακαυσμα πυρος, LXX.), and the priest pronounce it not contagious;

Or, if in the inflamed patch of skin there be an open sore, n the sore there be a glossy spot, either reddish or white,

And if the hair on the glossy spot be turned white, and the se involve the entire depth of the skin, it is a leprosy broken f the carbuncle; wherefore, the priest shall pronounce it con- us.

But if there be no white hair on the glossy spot, and it be not ssed below the level of the adjacent skin, but be somewhat dark lor, then the priest shall seclude him seven days:

And if on the seventh day it be spread to a considerable extent, the priest shall pronounce it contagious; it is leprosy.

But if the glossy spot be stationary, and spread not, but be what dark in color, it is an inflamed swelling of the carbuncle, ot contagious.

If a man or woman have an eruption on the head (nega, Heb., XX.), a plague; or a man, on the hairy part of his face;

The priest shall examine it, and if he find that the disease sink y into the skin, and the hair growing from it be yellow and thin, all pronounce the disease to be contagious, it is a *dry scall* c, Heb., θραυσμα, LXX., a dry scall), even a leprosy of the head ard.

If, however, it be no deeper than the surface of the skin, and it thout hair, then the patient that hath the scall shall be secluded days:

And on the seventh day, if the scall be not spread, and if there it no yellow hair, and it affect only the surface of the skin,

The patient shall be shaven, but the scall shall not be shaven, e shall be secluded another seven days:

And on the seventh day, if the scall be not spread, nor be deeper than the visible surface of the skin, then the priest shall pronounce the patient to be free from contagion:

35. But if after this the scall spread,

36. The priest shall examine him again, and if he find that the scall has really spread, he need not seek for yellow hair, the disease is contagious:

37. But if the scall continue stationary, and black hair has grown up therein, it is healed, and no longer contagious.

38. If a man or woman have in their skin bright spots or white bright spots,

39. The priest shall examine them; and if the bright spots be darkish white, it is a freckled spot (boak, Heb., αλφος, LXX., a freckled spot), and not contagious.

40. And a man may be bald, from the fall of his hair, without contagion;

41. And a man may be bald on his forehead without contagion;

42. But if there be on the bald head or bald forehead a white reddish sore, it is a leprosy:

43. Then the priest shall examine it; and if there be a white reddish tubercle like that which in leprosy appeareth on other parts of the skin,

44. He is a leprous man, and the disease is contagious.

Now the pathognomonic signs of leprosy, as described in this chapter, are: 1st, A bright or glossy spot in the skin; 2d, the disease penetrating the entire thickness of the skin; and, 3d, the hair growing from the affected skin being white or yellowish and faded; to which may be added, as signs of an advanced stage of the disease; 4th, a rising or tubercle of a whitish or reddish-white color, with or without fungous granulations (quick, raw flesh); and 5th, an ulcer (raw flesh). The favorable signs, on the other hand, are spots of a dull white (*lepra alphos*), instead of glossy white, or glossy and dusky; the limitation of the disease to the visible surface of the skin; and the absence of any change in the hair.

Judging from the language employed in verses 3, 4, 21, 25, 30, 31, 32, 34, we are inclined to think that the Hebrews restricted the signification of the word "skin" to that part of the integument which at the present day we call *cuticle;* hence the distinction which is made between the visible surface of the skin, as in verse 4, and the entire thickness of the skin, the cutis or derma of modern writers, as in verse 3. The text of the two verses is as follows:—Verse 4: "If the bright spot be white in the skin of his flesh, and in sight *be not deeper than the skin*." Verse 3: "And the plague in sight *be deeper than the skin* of his flesh." This distinction in reality constitutes one of the most important points of diagnosis between real leprosy and affections of the skin otherwise resembling leprosy; while, on the other hand, we can see nothing, either in the expressions used or in any part of the chapter, to lead to the inference that a subcutaneous disease is implied.

In verses 20 and 21 some little difficulty is imported into the sub-boil (verse 18), the hair of the affected skin being white (verse 20), is a contagious leprosy.

6. A bright spot, either reddish or white, and accompanied with white hair, occurring in the midst of a carbuncle in course of healing and penetrating the entire depth of the skin, is a contagious leprosy (verses 24, 25).

7. The same as variety 6, without white hair, not depressed, somewhat dark in color, but spreading (verses 26, 27), is a contagious leprosy.

8. A spot on the head or beard, accompanied by yellow, thin hair, and affecting the entire thickness of the skin, is a "dry scall" (verse 30), a contagious leprosy.

9. A spot on the head or beard, perfectly superficial without change in the hair, but spreading (verse 36), is a contagious disease.[1]

10. A white, reddish, elevated sore, occuring in a bald person and where the absence of hair excludes one feature of diagnosis, the reddish sore being like that which appears on any other part of the body in a leprous person (verses 42, 43, 44), is a contagious leprosy.

In other words, and more summarily defined, the *ten* varieties of contagious leprosy of the Levitical code are:—

1. The Tsorat or Berat lebena, *Heb.;* Beras bejas, *Arab.;* Lepra leuce, *Gr.;* Elephantiasis Græcorum; the bright white leprosy, true leprosy.
2. A spreading scab; probably an eczema.
3. The Tsorat, with funguous sore.
4. Fungous sore in conjunction with lepra alphos; the latter being the boak, *Heb.;* dull-white leprosy.
5. White elevation, with other signs of Tsorat, issuing from the cicatrix of a boil.
6. The Tsorat, issuing from a carbuncle.
7. The dusky-spreading Tsorat; the Berat cecha, *Heb.;* lepra melas, *Gr.;* dusky or nigrescent leprosy.
8. A dry scall on the head or beard; deep.
9. A dry scall on the head or beard; superficial, but spreading.
10. A white, reddish, elevated sore, on a bald person. A Tsorat, or Berat lebena.

Now, of the *ten* varieties of disease here designated under the generic term leprosy, it would appear that only eight deserve to be considered as the true leprosy or elephantiasis: namely, the *first*, which may be taken as presenting the specific type of the disease; the *third* and *fourth*, which add the fungous sore to the specific type; the *fifth*, being the specific type developed in the scar of a boil; the *sixth*, the specific type arising in a carbuncle; the *seventh*, a variety of the specific type distinguished by its dusky color; the *eighth*, a "dry scall." involving in morbid alteration the entire depth of the skin; and the *tenth*, being the specific type occurring on the head of a bald person. The remaining two varieties are, the *second*, a spreading scab, probably

---

[1] It is worthy of remark that the word *disease* is used in this place (verse 36) instead of *leprosy*, although there can be no doubt, from the context, beginning with verse 29, that the disease leprosy is intended.

zema; and *ninth*, a "dry scall," affecting the skin only superfi-
y, but exhibiting a tendency to spread. For the latter reason
e, namely, their progressive increase, they are classed with a con-
ous disease, as demanding, although not contagious in themselves,
sion from healthy persons.

AUSE.—The cause of elephantiasis is very probably a *malaria*
ndered by peculiar circumstances of soil and climate, the condi-
the most favorable for its development being such as belong to
land or to the sea-coast. In early times, supposing elephantiasis
orum to have been the leprosy of the Hebrews, the disease existed
dantly in Egypt and Syria. At the present day it is most largely
l in the islands and upon the sea-boards of the Indian Ocean, as
in Iceland and on the coast of Norway. In these instances the
se is endemic to the soil; but it may also be endemic to a race,
nong the African negroes of the West Indies. Although constant
selection of the sea-coast, the disease may also be met with in
in inland localities, as upon the mountainous ridges of Madagas-
the table-land of the Deccan, and the sterile district of Zenjan,
to the west of the Caspian Sea. It exists under the extreme
of the tropics and under the extreme cold of the northern regions;
found in damp and swampy localities, and also in those which
ry and sterile; in low-lying districts; and amongst the spurs of
untain range. It is impossible, therefore, to assign a special geo-
hical position or special conditions of soil or climate as essential
e production of the disease; and we can approach no nearer the
than to remark, that it is most abundantly found on islands and
nsulas near the sea-coast. Neither is it an appurtenance of a par-
ar race, as of the Jews or of the Eastern people in general; nor
ndent upon peculiarity of food. "In the island of Madagascar
e are a number of different races, of all shades of color, from the
negro to the Hovah, whose complexion is not darker than a
re of Spain. These occupy widely varying climates. The cen-
provinces, from their great elevation, possess a temperate climate,
ar to that of the south of France. The climate of the plains is
cal, and towards the north excessively warm. The circumstances
mode of life of these races are as varied as their origin and the
re of the localities in which they reside. Yet leprosy affects all
; the Hovah who lives in European fashion and in a temperate
ate is not less exempt from the scourge than the African slave.
found amongst the Betsemasarahas who eat pork, and amongst
Betanmenas who abhor it. It occurs where fish is an article of
but it is also seen where no fish is to be had, and where rice and
tables satisfy the simple wants of the population. It exists in
and country, at an elevation of 7000 feet above the level of the
long the coast line, and through all intermediate elevations."[1] As
e, the disease seems to be found chiefly among the lower orders
e native races; in the east among the dark races, in the west

---

[1] bercular Leprosy in Madagascar, by Dr. Andrew Davidson, medical missionary
hysician to the Court of Madagascar. 1864.

Bolton makes the curious remark, that "a young ox brought up at the Leper Asylum died of the disease."[1] Several medical men, who have had the opportunity of watching the disease closely, express their belief that leprosy may be conveyed to a sound person through the medium of the discharges of ulcers. The Chinese have a strong feeling as to the contagion of leprosy; and a woman afflicted with this disease seeks, by cohabitation with a healthy man, to relieve herself from its influence. Nevertheless, there exists a weak point in the theory of contagion, namely, that in all the instances adduced, the subject of the disease has been for a time, often a long period, an inhabitant of the country where the disease prevails endemically.

But, however contagious it may be through the agency of inoculation, it is clearly non-contagious in the ordinary intercourse of life, and, in general, is neither communicable from a husband to a wife, or from the latter to the former. Nevertheless, instances do sometimes occur in which married persons are infected the one by the other. It is believed in many countries that the leprosy wears itself out in three or four generations; and this belief is so strong in China, that the lepers are divided into classes corresponding with the progressive removes of the disease. Marriage with a leper is interdicted by law, but the lepers may marry amongst themselves, each in his own respective class; and the children of lepers of the fourth degree are considered sound, and are free to marry with any one they please. A further illustration of the exhaustion of the disease is shown in the census of the Seychelles Leper Establishment on the Ile Curieuse; thus, of forty-nine persons all living together, lepers and their progeny, eighteen, ranging in age from two to twenty-four years, were perfectly sound.

Elephantiasis affects all ages; it has been seen at birth,[2] at the age of two years,[3] and we ourselves have recorded a case in which the disease made its first appearance at sixty-seven. When of hereditary origin, or proceeding from lactation, it may be developed at the age of seven or fourteen; or from idiopathic causes, or other sources of contagion, at any period of life. And numerous instances are recorded of its existence in persons of seventy and eighty years of age.

PROGNOSIS.—The prognostics of elephantiasis are far from being encouraging. The common history of the disease is, that beginning insidiously, and progressing slowly, it gradually saps the powers of the patient, and ends only with his life. Even the duration of the disease has been determined approximately, ten to fifteen years for the tubercular form; fifteen to twenty years for the anæsthetic form. "Patients have lived," says Dr. Bowerbank, of Jamaica, "for thirty years and more, after the first manifestation" of the disease. As yet, no specific remedy has been found deserving of the name, although several are upon their trial; and for the want of a proper understanding of the nature of the complaint, scarcely a principle of treatment has been established; for our little existing knowledge of a *methodus*

---

[1] Abstract of the Replies to the Leprosy Committee.
[2] Dr. Saturnin, medical superintendent of the Leper Hospital, Trinidad.
[3] Dr. Abercrombie, Cape of Good Hope.

medendi, we are indebted to those honest laborers in the field of medical science, Danielssen and Böeck. It is assumed, rather than proved, that the disease may be combated more successfully at an early period of its course than at a more advanced period; when it sets in with fever, than when it is slow and progressive; and that the chances of cure will be greater when the malady is acquired, than where it is hereditary; and doubtless greatest of all where it has been acquired from sources of contagion, than from idiopathic causes. When the disease is once developed, the instinctive suggestion is to send the patient away from the place where the morbid influence is endemic, and, by a change of hygienic conditions, to arrest the current of the morbid phenomena. Hence, removal from Hindostan to Britain is one of the first recommendations of the physicians of India, and a similar practice is followed in other regions. From Scio, we learn, that "rare cases of spontaneous cure, in a very early stage of the disease, are said to have occurred by removal to a climate quite different from that where the disease originated, as Wallachia, Moldavia, or Russia. A man, twenty-eight years of age, son of a leprous mother, and having four brothers younger than himself, all leprous, left this island on the earliest appearance of the disease for Constantinople, where he lived four years. Last spring he returned, apparently quite well, but, being obliged to resume his work in the fields, within three months he became again leprous." It is surprising how very few cases have been observed of spontaneous cure, even as an aberration from the ordinary law; here and there one; one or two only in the extensive experience of Danielssen and Böeck. And at this point it is necessary to be borne in mind that the disease is remarkable for its periods of rest, sometimes extending over several years, during which the morbid action is quiescent, and especially for a rest after mutilation of the extremities. So that we must be cautious in regarding a mere respite from the operations of the disease as a state of cure. In anæsthetic leprosy, writes Dr. Fiddes, of Jamaica, the disease not unfrequently "expends itself," after which "the patient may live through the ordinary term of life, showing no trace of the disease except the mutilation of the extremities, and the leprous expression of the countenance." He mentions the case of a negress, aged fifty-five, in whom "a period of fifteen years has elapsed since the cessation of the disease, and her health has continued good. Both feet have been removed through the metatarsus, and all the fingers and the thumb of both hands at the metacarpal joint. She earns a livelihood as a washerwoman." He also adduces as another instance a woman of eighty, who had suffered to an equal extent with the preceding, but nevertheless enjoyed good health. He has seen cases in which the nerves, having been enlarged, have returned to their natural size, and others in which the normal sensibility of the mutilated extremity has been restored. Unfortunately, at the present time we must regard these instances of cure, or partial cure, as exceptional. Of a similar class is a case mentioned by Consul Skene, of Aleppo; the disease "had reached the first stage of ulceration, and an attack of smallpox accelerated the curative process." Time was not given to observe if the disease returned. And another case, reported by Governor Hamilton, of Antigua, carries us back to the days of ancient Greek medicine: "I have never met with a case of spontaneous cure but one, which was attributed to a popular remedy, namely, soup made of the common lizard." But it must be remembered, at the same time, that lizard soup is very wholesome and nutritious, and, like our own turtle soup at home, is one of the luxuries of the West Indies. The most sanguine prognosis, therefore, cannot go further than to declare that much may be accomplished by the medical art to check the development and progress of the disease, but little for its cure.

Treatment.—The treatment practised by the early physicians in this disease appears to have been founded on the principles of rational medicine, and to the present day we have made little progress beyond that point, having simply glided from a rational expectant to a rational empirical system. In adopting this latter system, we have perhaps attained all that, for the present at least, we may hope to accomplish, and our energies will be better employed in being devoted to the perfection of this plan than in seeking further into the obscurity of experimental medicine. Aretæus, who has left so excellent an account of elephantiasis in his writings, lays down as the proper plan of treatment, the practice of venesection, followed by the use of purgatives, diluents, baths, and inunction with fat, assisted by a plain, nutritious, and wholesome diet, accompanying the latter, if the powers of the constitution be reduced, with wine. The purgative most preferred is colocynth; the diluent, milk, attenuated with water; and amongst other medicinal substances employed, are, decoctions of simples, particularly the plantain; and the flesh of serpents, which was held in high repute by the ancients, and, when properly prepared, seems to have made a very agreeable article of diet, corresponding with the turtle of the present day. Other remedies recommended by Aretæus, are, the plant called sidéritis (ironwort), the trefoil, sorrel, and iris; alum, sulphur, and carbonate and phosphate of lime, under the form of elephant's teeth. The fats used for inunction were those of the panther, lion, and bear.

Ætius follows the general plan of treatment described by Aretæus, adding, that amongst the Indians it was customary to exhibit as a medicine the urine of the ass, probably on account of its diuretic effects, and prescribe as an article of diet the flesh of the crocodile. Serpents and reptiles seem to have acquired their reputation in this and other diseases in which the skin is affected, from their periodical exuviation of the cuticle, and the magistral inference that their flesh, partaken by man, would enable him to throw of, by a similar process of exuviation, the sordid covering of morbid secretions and scales which is apt to accumulate in these diseases.

Paulus Ægineta, pursuing the same course of treatment, recommends its adoption three or four times a year. To the purgatives already in use he adds aloes and white hellebore, and suggests the administration of an emetic, if needful. He also mentions, in his list of remedies, squills, cummin, calamint, hartshorn, theriac of salmis, and theriac of vipers. As a part of the hygienic plan of regimen, he prescribes gestation, vociferation, friction, and gymnastic exercises, particularly leaping. The body is then to be anointed with the fat of some animal, as of the boar, wolf, goat, or bird, or with butter. After inunction, the patient should betake himself to the bath, and be well rubbed with some stimulating juice or spirit, such as fænugreek, or gum ammoniac dissolved in vinegar; and, after the bath, he is to be anointed with a solution of gum ammoniac and alum in white wine, or with some gently stimulating and aromatic oil, such as that of myrtle.

Rhazes, the Arabian physician, commences his treatment with emetics, and reserves venesection for cases of severity or of long standing; he combines turbith (convolvulus turpethum) with colocynth for a purgative, and favors excitation of the skin by means of friction and hot baths, and further by the help of a liniment composed of onions and fennel, or of a lotion of strong acetic acid, in which madder-root has been for some time digested. If the powers of the constitution be reduced by the treatment, he recommends the use of good white wine.

Amongst modern authors, Schilling, who had considerable opportunities of experience in the treatment of elephantiasis, advocates a modified method applicable to the different periods of the disease. He commences by enjoining a moderate and unstimulating diet, consisting of bread, broth, and vegetables, and abstinence from milk. He prescribes laxatives, carefully avoiding mercurials; and if there be signs of plethora, he administers purgatives, and takes blood from the arm. Exercise he considers important, as a means of promoting perspiration, and rousing the patient from the state of apathy into which he is liable to fall; and he further acts upon the skin by means of diluents and hot baths, recommending the latter to be used carefully in advanced stages of the complaint, as being apt to occasion palpitations and faintings. The diluent remedies with which he proposes to dilute the humors are emollient and demulcent drinks, as barley-water, gruel, decoctions of mallow and pellitory; with infusions or decoctions of gently stimulating or alterative herbs, such as agrimony, ground ivy, fumitory, southernwood, veronica; and mild aperients, as senna and rhubarb warmed with aniseed. He recommends these drinks to be taken in quantities of eight pints in the day, and continued for six weeks at a time; and he states, as the effect of the treatment, that the secretions of the bowels and kidneys are regulated and brought into a healthy condition. After the above preparatory course, of six weeks' duration, he directs the employment of stronger alteratives and sudorifics, such as decoction of saponaria, sarsaparilla, squinanthus, contrayerva, serpentary, pimpernel, rapuntium, zedoary, sassafras, juniper, scolopendrium, holy thistle, pareira brava, and drinks of verjuice. He maintains a strict diet, and if nausea supervene, diminishes the dose of the remedy, or suspends it for a while. This, like the former course, he continues for a period of six weeks, and, as the state of the patient or of the disease indicates, he bleeds, purges, or adds tonic extracts to the preceding decoctions, such as fumitory, holy thistle, smaller centaury, pimpernel, arum, and wormwood. During the sudorific course he cautions the patient to avoid cold, lest it check a critical perspiration and induce diarrhœa, and he also suggests a cautious administration of purgatives, adding to those already mentioned, namely, senna and rhubarb—aloes, scammony, and the aperient salts of potash and soda. He prohibits acids and spirits during the treatment, as calculated to excite febrile action, but allows a more nutritive diet and a little good wine if the constitution exhibit signs of exhaustion or debility.

The treatment should be pursued for some time after the patients have recovered, and be discontinued by degrees. The skin should be restored to its proper state of tone by spirituous washes and aromatic fumigations, and, after his cure, the patient should carefully follow the prescribed rules of diet and exercise.

In a case treated successfully by Baumés there were taken three hundred baths in the course of a year; the chief remedies were demulcent, diluent, and sudorific drinks, including asses' milk, and the regimen was nutritious and unstimulating.

Specific remedies, as opposed to the rational expectant system of treatment above laid down, have gained few supporters and little credit. The mineral specifics that have been tried from time to time, are, mercury, antimony, arsenic, iodine, zinc, and gold. Danielssen and Böeck have had little experience of these remedies, their attention having been chiefly given to the physiology and pathology of the disease. Mercury, they say, has largely divided the opinions of physicians, because their diagnosis was inaccurate; and, according to those who are known to have had experience of the disease, both that mineral and its compounds have been found to be not merely useless, but also injurious. The chloride and bichloride of mercury have generally given rise to vomiting and diarrhœa difficult to check, or, failing this, have produced dyscrasis of the blood, a spongy and bleeding state of the gums, and a scorbutic state of the surface membranes. Antimony, the *primum mobile* of Paracelsus, had great weight with the older physicians, in the fourfold capacity of purgative, sudorific, diuretic, and alterative, but is of little value in elephantiasis. The preparations of iodine Danielssen and Böeck found to produce a burning sensation, with pain and swelling of the skin, in tubercular elephantiasis, when given in ordinary doses; but no such inconvenience when the iodide of potassium, in doses of a grain or a grain and a half, was administered. In the latter case a slight decrease of the tumors was observed after a long period of continuance of the remedy, but the improvement did not last. In the anæsthetic form the iodide of potassium relieved the pains in the bones; and the same effect resulted from the use of the bromide of potassium. Of the preparations of gold these gentlemen had no experience; they made trial of the chloride of zinc without benefit; and Donovan's solution was administered to seven patients, in increasing doses, and for a long period, without utility; four of these patients suffering under the tubercular, and three under the anæsthetic, form of the disease. Of arsenic they speak in terms of equal discouragement, and in a manner to suggest the doubt as to whether it could have been properly and carefully used. The arseniate of copper was also tried, and seems to have given rise to a succession of painful symptoms affecting the abdominal viscera.

The *vegetable specifics* which have gained a reputation from time to time are, black hellebore, lauded by Aretæus; pennyroyal, praised by Pliny; the plantain, esteemed by Celsus; the anabasis aphylla, a plant which grows on the shores of the Caspian Sea, commended by Gmelin and Pallas, but not valued by Martius; the asclepias gigantea of India, hydrocotyle asiatica, chaoul moogra, veronica quinquefolia, dulcamara, mezereon, aconite, conium, ledum palustre, &c.

The *animal* kingdom has contributed *specific remedies* from the class of reptiles, saurian, ophidian, and chelonian; and from the class of insects, cantharides. The latter remedy has acquired a false credit, probably from error of diagnosis, some form of alphos having been mistaken for this disease. Danielssen and Böeck make the same remark with regard to tar, which has also, and with little pretence, been admitted among the remedies for elephantiasis.

Reverting for a moment to the treatment of this disease pursued during the middle ages, we find it, as at the present day, displayed to us under the three aspects which constitute a rational expectant medicine, namely, hygienic, dietetic, and medicinal. In its *hygienic* aspect, fresh air, sufficient exercise, physical and moral, baths for cleanliness and to invigorate the skin, are as necessary now as they were then. In a *dietetic* point of view, a nutritive, unstimulating diet is one of the first recommendations at present, as well as in the past; and *medicinally*, diluents, laxatives, and alteratives, are almost merged in the general consideration of diet. Then there remain only *special* emergencies, which must be met by special remedies, and the application of those new aids which the light of science has made obvious to us, and those truths which she has taught us in later times. In respect of air, an inland residence lying high and dry, is more desirable than one near a river, lake, or the sea; for it is in the latter situations that elephantiasis is chiefly found. The plough and the new-turned earth would probably supply the double requisite of the best air and good exercise. In respect of baths, we have no need at the present day to inquire the nature of the fluid of which the bath should consist. The plain water-bath is as good as that of milk, and better far than the bath of blood in which the monarch of Egypt was wont to seethe his leprous limbs. As diet, a judicious blending of the animal and the vegetable seems that which is best fitted to man, in disease as in health; it is that which his tastes select; it is the one of which the naturalist predicates, from the structure of his teeth and conformation of his stomach, he was born to make use. We may, therefore, afford a smile of pity at the contrariety of opinions that exist with regard to the nature of the diet employed, a contrariety as great as the varied tastes of man; one while, the diet should be wholly vegetable; now, to consist alone of anti-scorbutic plants, to the exclusion of the cerealia and farinacea; then, to be chiefly of the latter class; another while, it should be milk; then, no milk; now, no fat, although the cod-liver oil is a remedy of acknowledged excellence; then asses' flesh, and so on, until the mind is bewildered. But from this very contrariety, we are warranted in drawing the conclusion, that a simple, moderate, and unstimulating diet is not only judicious, but necessary.

Amongst the specific remedies advocated in the treatment of elephantiasis, is one that we would fain have omitted to notice, and we only mention now to condemn, namely, *castration*. Under the impression that the stimulus given to the blood by the generative system was an excitant of the disease, patients have relieved themselves of these glandular organs, but without any benefit whatever; and the combined opinion of all modern authors is opposed to the barbarous practice.

To resume the practical consideration of the remedial history of this disease, we may now mention, that in 1844, Danielssen and Böeck projected a course of treatment which was found more successful than any which had been pursued up to that time. Thus they observe: Considering elephantiasis to be a disease depending on dyscrasis of the blood, we were of opinion that the treatment should be directed against the abnormal composition of that fluid; with which object, we prescribed a regular diet, together with cod-liver oil, the iodides of potash, iron, and mercury, the bromide of potash, and sulphur baths. As for arsenic, fearing it might give rise to indurations of the abdominal viscera, we have used it sparingly, and in very small doses. Thus far, the treatment is the same for both forms of the disease. Turning now to the tubercular kind, we endeavor to follow the method pursued by nature in the removal of the tubercles; and perceiving that her process consisted in softening and subsequent absorption, we had recourse to means adapted to bring about the same result. We sought to subdue the morbid state of the skin, and reduce its congestions, partly by frequent bleedings, and partly by stimulating the mucous membrane of the alimentary canal. For the latter purpose we had recourse to sulphate of magnesia, arsenic, or the tincture of cantharides. As a local treatment of the tubercles, we employed the acid nitrate of mercury (hydrargyri nitratis, one drachm; acidi nitrici, two drachms) for their destruction. Where they were less in size, and situated on the face, we pencilled them daily, or every other day, with a caustic solution of potash (potassæ fusæ, one drachm; aquæ destillatæ, two drachms); and where they were scattered generally over the body, we had recourse to caustic and sulphuretted baths, the caustic bath being composed of six or eight ounces of carbonate of potash, and an equal quantity of quicklime, mingled with the water; the sulphuretted bath, of five or six ounces of sulphuret of potash. The patients were kept in a bath for a period varying from one to three-quarters of an hour; the head was repeatedly dipped, and after each dip was deluged with cold water; and the bath was repeated daily, or every other day. Sometimes the caustic bath gave rise to superficial ulceration of the tubercles; when the ulceration was slight, the baths were continued, but when it became greater, they were suspended for a while. We also found caustic potash of service in those cases of tubercular deposition within the larynx which sometimes give rise to

the potash with honey, and applied it by
epiglottis, and even to the isthmus of the
cough succeeded the application, but each
me easier, and after a while, the symptoms of

m of the disease, we directed our attention
entres, and sought to neutralize or interrupt
on by means of cupping in the region of the
unter-irritation by means of tartarized anti-
nto the incisions, or an ointment of iodide or
moxa. In a number of cases treated in this
determine that the several remedies already
ly favorable influence on the disease, although,
s of our experiments, none were perfectly

method of treatment Danielssen adduces the
tailor, in whom the disease was hereditary,
asis in its compound form, tubercular and
ated by Danielssen, and got well. Twelve
a relapse, from cold, and the disease assumed
. There were insensibility of the skin of the
the hands, and an increased and painful sen-
parts, especially of the fingers, to such an
re bent, and he was unable to hold a spoon.
ttack with a three months' course of iodide
m, and with decided benefit; the excessive
rs had subsided, and given place to insensi-
e to feel his needle. He was thin and emaci-
le and flabby, and his skin dry and inelastic.
n; he continued the iodide and bromide of
ing along the vertebral column, and subse-
of the moxa. The patient improved rapidly,
ght and recovered their flexibility, the sensi-
d, his face acquired the aspect of health, and
nabled to resume his occupation.

hat of a man, aged twenty-four, whose body
ed tubercles from head to foot, some of which
rt of the skin, others were prominent, some
ing, and a few were ulcerated and covered
s swollen and livid; the tubercles on its sur-
ish, the eyebrows in great part gone, and
apparent in the nasal fossæ. There were,
egs and feet, and a swollen state of the in-
ease had commenced three or four years pre-
of reddish spots, which first broke out on the
on other parts of the body; the red spots
od, the present tubercles. He knew no cause
that he had been frequently exposed to cold
lept in his wet clothes. His progenitors and

family were entirely free from the disease, and, saving the above, he had had no other symptoms than occasional pains in the legs.

In the month of April he was bled to twelve ounces; five minims of Fowler's solution of arsenic were given twice a day, half an ounce of cod-liver oil three times a day, and a sea bath four times a week. In May the bleeding was repeated to ten ounces; he was cupped with eight glasses on the legs, and the Fowler's solution was increased to eleven drops, then thirteen, then fifteen. In June he was bled to twelve ounces; cupped with six glasses on the legs; the arsenic was stopped early in the month, having given rise to pains in the abdomen and cough; and a little more than a grain of iodide of potassium was administered every two hours, for pains in the legs and soles of the feet, which came on chiefly at night. In July he was twice cupped in the vertebral region, each time with six glasses; and the cod-liver oil was discontinued, having excited disgust. In August the proto-ioduret of mercury was given for eighteen days; at first, half a grain, subsequently, one grain twice a day, for the purpose, apparently, of hastening the healing of the ulcers, and removing a thickening which had been left in the cicatrices, together with the thickening and infiltration of the integument of the legs. These objects were, in a great measure, gained, the thickening of the cicatrices and infiltration of the skin of the legs were removed, but the ulcers took to bleeding, periodical pains occurred in the legs, and pains in the teeth. After the cessation of the mercury, the ulcers improved rapidly. In September the iodide of potassium was given up, cupping on the back was repeated several times, with the view of restoring the sensibility of the hands and feet, and, with the same object, baths containing sulphuret of potash, and the caustic bath of carbonate of potash and quicklime were ordered; at first, the sulphuretted bath daily, then in alternation with the caustic bath, and later still, the caustic bath increased in strength (eight ounces of lime and eight ounces of potash). In October he reported himself as feeling better than for years before; he had a desire for work, and, with the exception of a bluish tint of complexion, looked fresh and animated. The baths were given up; but, as a little dulness of feeling still remained in the fingers and toes, a moxa of the size of a crown-piece was placed near the spine, between the sixth and tenth vertebræ. In November the moxa was kept open by means of from sixteen to twenty peas, sensibility was almost completely restored, but he had still a difficulty in picking up small objects such as needles. In December sensibility was perfect; he had no pains of any sort, he was active, and returned to his home, although against the wishes of his physician, who still wished to observe his progress, and anticipate any chance of relapse.

Early in the treatment, as early as May, the tubercles had commenced to diminish in size, and their diminution was progressive to the end of the treatment, when they had disappeared entirely, leaving behind them, however, a bluish and apparently deep-seated discoloration; the skin of the part being thinner than natural. They were at first painted with the strong caustic solution, and subsequently with the acid nitrate of mercury, which caused absorption of some and ulceration of others. The ulcers within the nose were painted with a liniment of laudanum and oil, one part of the former and two of the latter. In June the ulcers were in process of healing, and their progress was continued steadily. In July the tubercles on the face had disappeared, but their remains might be detected under the skin, as a slight thickening of the tissues. To remove these remains, the iodide of mercury was successfully given in August; and, although the primary effect of this remedy on the ulcers was not satisfactory, it no doubt contributed to their rapid healing, which took place immediately afterwards. The thickening and infiltration of the legs was attacked in May by cupping, the cupping being repeated in June, and received its *coup de grâce* in August, from the eighteen days' course of iodide of mercury. The nocturnal pains in the legs and soles of the feet, disturbing sleep, complained of in June, yielded to the iodide of potassium, in doses of four, seven, to ten grains daily, assisted, firstly, by a general bleeding, and subsequently by the cupping practised for the swelling and infiltration of the integument of the legs. The iodide of potash was given in a peculiar manner, in one-grain doses every two hours. We have no experience of this mode of administering the remedy, and should have preferred five grains three times a day. This, however, is a matter to be determined by experience alone. The arsenic seems to have played a very unimportant part in the treatment; it was taken in July for seven weeks, and increased too rapidly in dose, rising during that short period from five to fifteen drops of Fowler's solution. It had, therefore, every opportunity of developing its bad effects, without having time to work the benefit which arsenic is capable of producing when given in moderate and long-continued doses. Early in June it was found necessary to stop it, from the occurrence of abdominal pains and cough. The insensibility of the feet and hands, which followed the pains in those parts, no doubt received benefit from the iodide of mercury, and also from the stimulating baths; but the remedy especially and most successfully directed against that symptom was bleeding and counter-irritation; the patient was repeatedly cupped in the region of the spine during the month of September, and had a large moxa applied in October; the ulcer made by the moxa was still open in December.

The local treatment of the ulcers of elephantiasis is to be conducted according to the common principles of surgery, to allay inflammation, control decomposition, assist the separation of dead parts, and promote the healing process. The enumeration of these indications suggests the means and remedies which should be employed. Schilling recommends the tinctures of aloes, myrrh, and amber, useful stimulants, which, in modern surgery, have been transferred to the stable. He cautions us against the use of oils and fats, and strongly against mercurial ointments, which, he says, the skin cannot bear, so long as the morbid miasm retains its place within the body.

It may be gathered from the views of treatment now put forth that we must rely upon ourselves, and not upon any fortuitous gifts of Providence, to cure elephantiasis; and on a due appreciation of this truth will, in great measure, depend our success and the safety of our patient. We must use, and learn to use effectively, the means we have; and in doing this we shall acquire a more powerful specific than any that can be presented ready prepared to our hand. If, after this essay, the specific should arrive, we shall be the better able to use it judiciously; if it should not be forthcoming, we have discovered the means of doing without it. It is probable that elephantiasis would never have been the scourge to the world it has if this truth had been felt and acted upon earlier; if physicians had set themselves to discover the cause of the disease, and followed up their search by working methodically to remove that cause, rather than puzzle themselves and their successors by vain theories and equally vain experiments with the long list of simples which have been proved to be simply innocuous to man. Danielssen and Böeck, discarding these empirical means, have determined the cause of the disease, be it miasm or poison, to be present in the blood. They have observed the alterations of the vital fluid occasioned by its presence; they have traced the morbid effects of that cause in its action on the nervous system, and on the various tissues of the body; they have pointed out that the morbid products are projected to the surface of the affected organs and to the surface of the body; and they have established a principle of treatment which has for its object to change the composition of the blood, alter and improve nutrition, and eliminate the poisonous elements of the disease. In pursuing this principle they have the means to a favorable issue in their hands, and we doubt not will successfully combat the disease which is now ravaging the shores of their country, and at the same time give a useful practical lesson to the world.

The treatment of elephantiasis, therefore, whether it present the tubercular or the anæsthetic form should be conducted on the same principle. Portions of the blood of the patient should be taken from time to time, the quantity and frequency to be regulated by his strength; and the blood so taken should be replaced by the nutritive matter derived from a well-selected diet. Thus, the morbid blood will give place to a sounder and more healthy fluid. Alteratives should be given to alter and improve the chemistry of nutrition, than which none are better than arsenic, judiciously employed, and cod-liver oil. Thus, sanguification will be directly benefited, and with sanguification, as a matter of course, innervation. Elimination is to be rendered more energetic, to facilitate the requisite changes in nutrition. With this view, the alimentary canal, the liver, the kidneys, the skin, are all to be brought into more active play; to which end, saline aperients and diluents are the appropriate remedies. Elimination, stimulation, and counter-irritation of that most potent emunctory, the skin, are all set in operation by baths, the hot air and vapor bath, sea bath, sulphuretted bath, and caustic bath, already mentioned; and, for a local purpose, the skin may be further stimulated by counter-irritants, and by the use of the moxa. Local symptoms, such as infiltration and thickening of the skin, require simply a local application of the same general principle, such as cupping or leeches; and the loss of sensibility of parts of the body, cupping and moxa to the corresponding parts of the spine.

Danielssen and Böeck regulate their treatment in accordance with he degree of severity and stage of the disease, and the power and ondition of the patient; and, according to their latest[1] experience, hey recommend, for the first twelve months, generous diet, regular xercise, warm sea-water baths twice or three times a-week, together with cod-liver oil and chalybeate remedies, and, where enlargement f the lymphatic glands raises a suspicion of struma, iodine and iron. The chalybeates to which they give the preference are the hydrated oxide of iron, three grains three times a-day; the saccharated carbonate, six grains three or four times a-day; and the solution of sesquichloride, two to sixteen minims every two hours. Cod-liver oil they prescribe in doses of half an ounce twice or three times a-day, and, in the case of scrofulous diathesis, two to six drachms of the syrup of the iodide of iron daily.

In the absence of debility and emaciation, or when, under the above treatment, the system has acquired a better tone and condition, and when the cutaneous manifestation is the chief indication for relief, they prescribe the local abstraction of blood by means of cupping, a vapor bath three times a-week, and a four months' treatment with tartarized antimony. The dose of the tartarized antimony is a quarter of a grain every two hours for one or two weeks, to be increased gradually during the following month until it reaches three-quarters of a grain, and then reduced in a similar manner during the following ten weeks, until the period of four months is completed. If the treatment occasion nausea, the dose must be advanced more slowly, or qualified with syrup of poppies or tincture of opium; and if the patient prove intolerant of the remedy, nitrate of potash, in doses of seven grains and a half, should be substituted for the antimony, and taken for the same space of time. In children under eight years of age a leech should be substituted for cupping, warm baths for vapor baths, and smaller doses of antimony prescribed.

Danielsson informs us that, in its early stages, the disease will sometimes yield to the above treatment; the patient may recover his healthy condition, the spots fade away, and, if any anæsthesia have already occurred, the sensibility may return. In general, however, although the more pressing symptoms may be removed by the treatment, the disease continues to linger; in which case the cupping and the baths are to be repeated, unless the abstraction of blood be contraindicated by anæmia, when it will be proper to have recourse to chalybeates. But the antimonial treatment should be suspended for four months, and at the end of this interval be resumed as before, and for a like period. If the pains continue to be troublesome, and are succeeded by anæsthesia, electro-magnetism may be employed daily. And if they still remain severe, they must be assailed with subcutaneous injections of morphia and atropia. On the other hand, if the pains cease to occur for six months, the treatment may be suspended, and a cure anticipated.

When, however, the spots have merged into blotches of large size;

---

[1] Recueil d'observations sur les Maladies de la Peau, 3me livraison, 1862.

when the discoloration of the surface has increased; when cutaneous hyperæsthesia is developed; and the pains are deep-seated, violent and constant; and when, also, deformity of the joints has commenced, symptoms which indicate that the trunks of the nerves are involved, Danielssen prescribes immersion in a warm bath for two to seven hours daily for a period of six weeks, plain for the first fifteen days, and subsequently containing from one and a half to three ounces of nitric or nitro-muriatic acid. And he combines with this plan the antimonial treatment already described; and if there be no anæmia, cupping on the back or the extremities twice in the week; in some instances inducing suppuration in the wounds caused by the scarificator, by frictions with an ointment of tartarized antimony.

In addition to these measures, Danielssen endeavors to remove thickening of the sheaths of the nerves by the subcutaneous injection of oxide of chromium, and neuralgic pains by the subcutaneous injection of morphia and by the application of blisters of the compound tincture of iodine and nitrate of silver. When the chief trunks of the nerves have become enlarged and thickened, when anæsthesia is established in the skin, and when the fingers and joints are dislocated and distorted, then, he says, nothing remains to be done but to relieve pain, the most powerful agents for that purpose being the local abstraction of blood, and sometimes the current of a powerful galvanic battery.

In our own limited experience of this remarkable disease, the indications for the regulation of treatment would seem to be to sustain generally the powers of the constitution; to prevent the morbid changes in the blood resulting from the presence of the supposed malarious poison; to arrest, if possible, the confirmation of a diathesis; to combat febrile symptoms as they arise; and to treat on general principles other symptoms developed in the course of the affection. Thus in the *latent period*, we should have recourse to quinine, quassia, nitro-muriatic acid with bitter infusions, chalybeates, and, on the principle of catalysis, the hyposulphites, especially that of soda. We might also deem it desirable to administer arsenic or cod-liver oil, and stimulate the skin with warm bathing. During the *febrile period* our remedies must be of the class of antiphlogistics, especially the chlorate of potash, and warm baths. And during the *persistent period*, comprehending the onward course of the disease, an extension of the plan laid down for the latent period, with the addition of more decided tonics, such as the tincture of the sesquichloride of iron, iron with phosphoric acid, the citrate of iron and quinine, and iron with arsenic, with a continuance of the catalytic remedies and warm baths. For the relief of local pains we have seen much benefit result from the use of a liniment composed of linimentum saponis, with cajeput oil and chloroform.

Assuming elephantiasis to be a mal-assimilation, a cachexia originating in malaria, we should not *a priori* expect to derive much assistance from mercury and iodide of potassium, the great emunctory remedies so valuable in syphilis; and experience has proved that these medicines employed as emunctories have been more injurious than useful in this disease. Iodide of potassium is suggested not only on account of its anti-syphilitic powers, but also as a remedy against the neuralgic pains, and an absorbent of the deposits accumulated in the tissues, constituting thickenings and tubercles. The opinion of Danielssen, however, on this point is far from being encouraging. "There is scarcely," he says, "a preparation of iodine that I have not tried, and I am bound to declare that of all our known remedies, iodine is the least suitable for elephantiasis. The remarkable reactionary powers of its salts, on which I have often expressed my opinion, has led me to give them repeated trials, but I must confess that I have never obtained any satisfactory results. Nevertheless, the fact that these medicines tend to produce a dyscrasis of the tubercles, has led me to hope that an elimination of the morbid elements of the disease might in the end be brought about; and I have therefore commenced the use of iodine by subcutaneous injection in cases where I had previously administered it internally."

The persistent period of the disease is the proper time for the use of specific remedies, of which the most important are the asclepias gigantea of Hindostan, the hydrocotyle asiatica, the chaoulmoogra, and the veronica quinquefolia.

The *asclepias gigantea*, or rumex gigantea, in the native language of Hindostan called Mudar, Muddar, or Mudarrh, has gained much reputation in the treatment of leprosy. Robinson, in his Essay on "Elephantiasis, as it appears in Hindostan,"[1] remarks, that in the treatment of this disease, bleeding, mercury, and antimony, used singly, are of no use; but that the last two, combined with the root of the mudar, have been found successful when aided by the application of topical stimulants. The formula he proposes is composed of half a grain of calomel, three grains of antimonial powder, and from six to ten grains of the powder of the root-bark of the asclepias, to be administered three times a day; and the local stimulant, a weak acid solution (four grains to the pint, with ten minims of hydrochloric acid) of the bichloride of mercury, applied with friction to the local affection.

The asclepias gigantea was discovered by Playfair, who called it *vegetable mercury*, and regarded it as a specific in the cure of lues venerea, elephantiasis, and cutaneous eruptions. It is, he remarks, the most powerful alterative hitherto known, and an excellent deobstruent. In the *jugaru*, or leprosy of the joints, he never found it fail in healing the ulcers, and often succeeded in effecting a perfect cure of the disease. Robinson agrees with Playfair as to the utility of the asclepias in elephantiasis, and bears witness to its "powerful effects as a deobstruent and sudorific, in almost all cutaneous eruptions arising from obstructed perspiration and an apathy of the extreme vessels. Its action is quick and decided, causing a sense of heat in the stomach, which rapidly pervades every part of the system, and produces a titillating feel on the skin, from the renewed circulation through the minute vessels. It does not appear to be useful, or, indeed, admissible, where the affection is inflammatory or the eruption pustular. The great and rapid determination it causes to the skin has an obvious tendency to increase such diseases. I have tried it freely in lues venerea, but cannot venture to recommend it as a substitute for mercury. It will enable you to heal a chancre, but does not eradicate the poison. In the secondary symptoms, however, it is an admirable ally, superseding, by its certain efficacy, the exhibition of mezereon, sarsaparilla, and other vegetables of doubtful utility. Where mercury has been used, but cannot be pushed safely any further, the mudar rapidly recruits the constitution, heals the ulcers, removes the blotches from the skin, and perfects the cure. The only part of the plant useful in medicine is the bark of the roots. It should be gathered in the months of March, April, and May. The bark stripped from the root, being well dried, is readily beaten into a fine powder, of which the dose is from three to ten grains, thrice a day, for an adult; six grains is enough to commence with. As the plant grows wild everywhere throughout Hindostan, it may be applied advantageously externally. I have often used a poultice made of equal parts of this powder and linseed dust, with decided benefit, in bad ulcers, from whatever cause; and even in gangrene it acts as a detergent in cleansing the sore, and powerfully stimulates the healthy granulations. Decoctions may often be employed, where the stomach would reject it in substance. When it causes pain in the stomach, a few grains of magnesia or prepared kali added to each dose will prevent that effect. That this medicine is really the principle in the cure, I have no doubt; for I scarcely ever succeeded by any means in curing or even checking the disease before I employed it, and have scarcely ever failed of doing both since."

---

[1] "Medico-Chirurgical Transactions," vol. x. 1819.

The asclepias has been employed in combination with arsenic, as in the celebrated "Asiatic pill,"[1] and the mudar powder is also used in Hindostan in the form of an ointment, in combination with lard or spermaceti cerate.

Another vegetable remedy which has attained a high and apparently a deserved reputation in the East, the *hydrocotyle asiatica*, is a plant resembling in appearance and ordinary characters the common hydrocotyle of the stagnant ponds of this country. The hydrocotyle asciatica is reputed to be specific in many diseases, particularly those of the skin, and useful in all cases of leprosy. Mr. Hunter, in his report to the Board of Health of Madras, in February, 1854, on fifty cases of diseases of various kinds, of which thirty were cured and the rest greatly benefited, remarks, that "the affections in which this medicine has been peculiarly efficacious are, ulceration, syphilis, and scrofula. Almost all cases of ulceration are cured with this remedy. Amongst the cures were several cases which had resisted other modes of treatment. This medicine may be recommended as an excellent stomachic and tonic. It appears to have a peculiar action on the capillaries of the mucous surfaces, and on the skin; it causes at first a sensation of heat in the stomach, and at the same time a prickling in the extremities and then over the whole skin of the body, soon followed by an augmentation of appetite and transpiration, and a general improvement in the health."

---

[1] *Vide* selected formulæ.

M. Boileau, a physician of Mauritius, published an account of this plant, as a remedy for leprosy, in 1852; and M. Jules Lepine of Pondicherry, in the *Journal de Pharmacie et de Chimie* for 1855, has given a further description of the plant, with a chemical analysis, pharmacology, and list of the formulæ used in the Government dispensary at that place. The properties of the plant seem to be due to a peculiar vegetable principle which he names *vellarine*, from *vellarai*, a native name of the hydrocotyle. Vellarine is a thick, pale yellow oil, having a bitter and penetrating taste which abides for some time on the tongue, and is most abundant in the roots, wherein it exists in the proportion of somewhat more than one per cent. Besides the vellarine there is a yellow oil, brown resin, green resin, saccharine extract, non-saccharine extract, and bitter extract; the latter, in the proportion of ten and a half per cent., is found only in the root. The fresh plant is slightly bitter and aromatic in taste.

The pharmaceutical preparations of the hydrocotyle are, a *powder* of the entire plant, of which the dose ranges from one to six grains daily; a *syrup*, prepared from the juice, useful for children, the dose ranging from two drachms to two ounces daily; a *tincture*, the daily dose ranging from ten to forty drops; an *infusion*; an *ointment* of the green plant; and *baths*, containing four pounds of the plant, either green or dried. Similar preparations are made from the root, and are much more active than those of the entire plant, the root containing, as already mentioned, the largest proportion of vellarine. Vellarine cannot, however, be employed separately, from its great hygrometric qualities and active tendency to decompose. Vellarine has also the property of volatilization at 212°, and the virtues of the plant are consequently destroyed by exposure to heat. For this reason decoction and extract are inadmissible forms.

The virtues of *veronica quinquefolia*, also an Indian remedy, have been advocated by Mr. William Prince, Dr. Beach, and Dr. Ogden, both as a cure for leprosy and as a general emunctory. The part of the plant employed is the root, and ten ounces are said to be sufficient to cure a leprosy; while, according to Dr. Ogden, twelve ounces in four doses will restore the blood of an adult to the purity of that of an infant.

The *chaoulmoogra odorata* or petarkura is a tree of large size, indigenous to the Sylhet district of Hindostan. It is described by Roxburgh in his Flora Indica, and is placed by Lindley in the order Pangiaceæ, and distinguished by the name of gynocardia odorata. The medicinal part of the tree is its seed, which is small in size, and yields, according to Dr. F. J. Mouat,[1] "a bland fixed oil, with a peculiar and slightly unpleasant smell and taste, with the faintest possible after-flavor of the bitter almond." This seed has been long known to the natives for its virtues in the treatment of leprosy, and is apt to be largely adulterated when sold in the form of oil. It may be exhibited as a pulp of the decorticated seed made into pills, the dose being six to twenty grains three times a day, or six to twelve minims of the oil; and for external use the pulp of the seed may be beaten up with lard, or the oil may be simply applied with a camel's-hair brush. It is advisable to avoid salt meats, acids, spices, and sweets, during its use; but its action is encouraged by oily fluid, butter, &c.; and it might probably be combined advantageously with cod-liver oil. When taken in excess it produces nausea and irritability of stomach.

---

[1] The Indian Annals of Medical Science, April, 1864.

Dr. Mouat narrates three cases in which he employed the chaoulmoogra seed with very satisfactory results: one a bad case of ulcerative elephantiasis; a second, an equally bad case of scrofulous ulceration; and the third, one of constitutional syphilitic ulceration. In the case of ulcerative leprosy, the sores began to heal rapidly after the patient had taken the remedy for a fortnight. In the scrofulous case the remedy was more active in its operation; and the third, which was regarded as hopeless, was effectually cured in six weeks.

Dr. Marshall, of Bombay, found nitric acid a valuable and successful remedy, exhibited in the dose of one drachm daily, diluted with a pint or a pint and a half of water. Of two hundred patients treated on this plan, more than one-third were cured, and the greater portion of the remainder much benefited. Dr. Powell, of Mauritius, derived great benefit in anæsthetic leprosy from the continued use of quassia in doses of ten grains twice a day; the ulcers became more healthy and healed, and the patient remained well, frequently for two or three years.

Dr. Seeman, in his account of a mission to Viti, gives a narrative of a barbarous method of cure of leprosy practised by the Fijians. His account is founded on the statement of a Wesleyan minister, who knew the patient as a "fine healthy young fellow;" he was "surprised to find him one day so much altered by the effects of leprosy. Some time after, he again met him in full health, and on inquiry learnt the treatment adopted to bring about this change." It must be premised that we have no evidence of the disease referred to being leprosy; and the improbability is increased by the brevity of the attack and the suddenness of the cure. But, to proceed, a small fire was made in a closed shed with the wood of a poisonous tree, the sinugaga or poison sinu, Excæcaria agallocha of Linnæus; the patient was then rubbed with the leaves of the tree and bound hand and foot; next a cord was made fast to his ankles, and he was suspended head downwards in the thick black smoke of the burning wood; there he was left for several hours and until he had fainted away. He was then scraped, and freely bled by means of incisions made through the skin, taken down, and laid upon a mat to "await the result"—"in some cases death, in many life and health."[1]

EXISTING FORMS OF ELEPHANTIASIS.

Taking a mental survey of that grand, that elephant disease, the leprosy of the middle ages, which forms so prominent a feature in the history of Europe, and especially of Great Britain, of which examples have not very long vanished from our land, the question naturally arises to the mind, And is it gone? And if it be gone, has it left no remains behind? Are there no traces of THE leprosy? Is there nothing at the present hour which belongs to, is a part of, is a living record of that immense disease? Can our medical antiquaries discover no impression of its gigantic footsteps? Has it passed away like a shadow, or like the wind, totally, and never to be seen again? To which we answer, It would be contrary to all analogy to suppose that it had so totally passed away as not to leave a trace; and yet no sign exists in the records of medicine to tell us that such is not the case. But though the sign may be absent in the records of medicine, the infallable sign remains imprinted on man. Leprosy exists amongst us still, but only as a faint trace of a worn-out disease, or as an ember of the burnt-out fire. God forbid that the spark should be rekindled! We repeat, that elephantiasis still exists amongst us in this country as a *faint trace* of its former self, and the observation of that trace, however faint, becomes a matter of interesting research. Although a mere shadow in comparison with the parent disease, it is nevertheless sufficient to occasion considerable annoyance to the sufferer, and to bring him not unfrequently under the inspection of the medical man. Nor, when once pointed out, can the medical man doubt for an instant the nature of the disease which he has before him: there is the insensibility, the metamorphosis of tissue, the blanching, the exhaustion of function, and the atrophy of the parent malady, with all their original distinctness, indeed, one complete symptom of the pure elephantiasis, preserved unchanged, as it existed amongst the Hebrews, and as it is to be found at this moment on the shores of Norway, the symptom which was called by the ancients *morphœa.* This symptom, or rather sign, has been handed down to us by our forefathers, and it is this which we shall now proceed to describe, preserving the name by which it was originally known, namely,

---

[1] Report of Leprosy Committee.

MORPHŒA.

Syn. ***Vitiligo; morphœa maculosa; morphew.***

MORPHŒA, derived from the Greek word *μοςφὴ*, *forma,* signifying a visible appearance, and in application to its seat, a visible appearance or spot in the skin, is, as its name implies, a spot upon or in the skin, of irregular form, and either white, *morphœa alba*, or of a dark-brownish or blackish hue, *morphœa nigra.* Moreover, morphœa alba admits of a secondary division, from presenting two varieties, one in which there is induration of the skin, from deposition in its tissue of a lard-like substance, *morphœa alba lardacea, vel tuberosa;* the other being distinguished by atrophy of the skin, and by a greater degree of insensibility, *morphœa alba atrophica, vel anæsthetica.*

MORPHŒA ALBA LARDACEA.

Syn. *Berat lebena*, Heb.; *lepra leuce; vitiligo candida; morphœa maculosa alba; white morphew.*

Morphœa alba lardacea, vel tuberosa, presents itself in the form of one or several circumscribed patches, varying in size from a crown-piece to several inches in extent, and may occur on any part of the skin. The surface of the patch is uniform with the cutaneous integument, being neither elevated nor depressed, but remarkable for its marble-like whiteness, smoothness, and polish. It is more or less dense and hard, and frequently roughened on the surface by a slight desquamation of yellowish dried-up cuticle. Its hardness and density serve to isolate it from the surrounding integument as completely as its color, and when it occurs in small patches, it has the appearance of being inlaid in the skin. When recent the edge of normal skin immediately surrounding it presents a delicate lilac blush; but in cases of long standing no such border exists.

The smoothness, whiteness, and polish of the morbid integument all proceed from the same cause, namely, infiltration into the cutaneous tissue, or deposition within its cells, of a white semi-opaque substance, very much resembling *lard*. The skin looks as if it were injected with lard, and so distended as to obliterate the usual markings of the cuticle; the wrinkles of the surface, if any exist, being produced by the folding of the skin during the motions of the body. Another cause of the whiteness of the skin, is the absence of the capillary plexus, and the almost total absence of bloodvessels. Sometimes, if the patch be large, a small vein may be seen gathering its tributary venules here and there, and sinking into the deeper structure, but the smaller patches look as if the skin were dead. Indeed, the deadness is not confined to appearance alone; the patches are more or less deficient in, and sometimes entirely devoid of sensation, showing that not only the bloodvessels have become obliterated, but the nerves themselves are destroyed. In addition to these characters the patches have a peculiar baldness of appearance; they are either wanting in the usual downy hair of the body, or the hairs are bleached and imperceptible, and with the absence of hair-formation, there is also an absence of the secreting function of the skin.

The white patch of morphœa is often in the state now described, when first observed by the patient, but it always begins as an erythematous spot. When seen from the beginning, the spot is of small size, not larger than a fleabite, but in a few days it increases to the dimensions of a crown-piece or the palm of the hand. The redness is altogether unlike that of common erythema; it is never vivid, and scarcely exceeds a delicate lilac blush. The redness continues for some days or weeks, and then, without any other perceptible change, the skin corresponding with the lilac blush becomes blanched, and constitutes the kind of patch just described. The blanching process begins in the centre of the patch, and the redness then forms an areola around it, the areola being gradually narrowed until it becomes a mere border or rim, generally slightly raised, and at last fades way altogether. The development of the erythematous spot is usually ccompanied with a feeling of tingling, like that occasioned by presure on a nerve. Sometimes this sensation is sufficiently powerful to attract the attention of the patient, and give him annoyance; at other imes it is scarcely appreciable.

The size and number of the patches are very various. We have seen a number clustered together about the neck, each no longer than a lentil. A common and usual size is that of a crown-piece or the palm of the hand; and we have seen one patch occupy the greater part of the thigh. The limb had the appearance of a piece of beautiful marble sculpture, highly polished. One felt tempted to touch it, it looked so white and smooth, to be convinced that it was not marble; and one was astonished to find that, though so lifeless in appearance, or resembling only living marble, it gave the sensation of warmth. We recollect expressing our astonishment in looking upon that limb; and, upon asking some question, the gentleman smiled, and said that it gave him no inconvenience, and if it were not for the appearance, he should not know that it was there. The patches rarely exceed three or four in number; they are more frequent in women than in men; and their common seat is the supra-clavicular region of the neck, the chest just below the mammæ, the front of the abdomen, and the thighs. We have a patient now under treatment who had a patch on the forehead and nose, in which the morbid skin became shrunk and atrophied, and resembled a piece of dried white leather, perforated with small holes as if worm-eaten and almost equally insensible.

Our friend Mr. Samuel Wood, of Shrewsbury, writing to us lately, says: "I have under my care, in the Infirmary, a woman aged thirty, suffering under a peculiar cutaneous disease. Under each mamma the skin had deposited in it a sort of wax-looking secretion. The part bears a strong resemblance to a recently blistered surface on a dead body, only the cuticle remains, and there are minute blood-vessels ramifying over several parts. The edge is slightly raised, and beyond this there is a slight blush. The size of the patch on the left side is four inches long by three broad. It has been slowly progressing for about twelve months. There is little pain, but an occasional burning heat."

Mr. C. Wilson Steel, of Lewisham, writing to us about the same ime as Mr. Samuel Wood, says: "My patient is about thirty-five ears of age, and has three children, the youngest being eight years ld. She is of spare habit, active, has a soft, cool, but dry skin, rely perspires, and enjoys good health. About seven years ago e perceived for the first time, a *white spot* on the back of the hand; bsequently, other spots appeared on different parts of the body, on the abdomen, thighs, and arms; indeed, they are dispersed ore or less abundantly over the entire surface. The face is free, ith the exception of a stripe along and underneath the lower lip. he whiteness is more apparent in contrast with the color of the rest the skin in summer than in winter; and a new spot is preceded by feeling of numbness and heaviness, which gives the patient warning of its occurrence. The spots do not attain any magnitude; and the spread of the disease takes place by new spots, which when once formed, are permanent. They are distinguished from the surrounding skin, not by any raised margin, by any chap, ulceration, scurfiness, or other morbid condition visible to the eye, but simply by a *dead, pearl-like whiteness*, bordered by an abrupt line, and exhibiting no transition, either on the side of the morbid or healthy skin. The spots are of various shape and size, and unaccompanied by sensation of pain, other than the premonitory numbness and heaviness already mentioned. In the winter the distinction between the white patches and the surrounding skin is not strikingly appreciable; but in the summer it is very evident."

In this country, at the present time, the disease, perhaps, never advances beyond the state of skin now described; it may become more extensive, harder and more callous; but our experience does not enable us to say whether any other symptoms of elephantiasis follow upon this first step. We have observed several cases of morphœa alba lardacea for periods varying between two and ten years, and have seen no other symptoms arise. But in countries where elephantiasis still exists, particularly in hot climates, this form of morphœa is often the immediate forerunner of that serious disease.

MORPHŒA ALBA ATROPHICA.

Syn. *Berat lebena*, Heb.; *lepra leuce; vitiligo candida; morphœa maculosa alba; white morphew.*

Morphœa alba atrophica, vel anæsthetica, differs from morphœa lardacea not so much in degree of insensibility of the skin, as in the total atrophy by which it is attended. The patches are of the same figure and size, the skin as white, the lilac erythematous blush and the tingling sensation which precede, and the lilac border which surrounds them, the same; but there is no deposition of morbid matter in the texture of the derma, and consequently no marble-like smoothness, polish and hardness; the lardaceous deposit is absent. In fact the two forms of morphœa alba bear the same relation to each other as do the two forms of elephantiasis; morphœa lardacea belonging to the tuberculated, and morphœa atrophica to the anæsthetic type. From the absence of deposition in the tissue of the derma, and, as a consequence of defective nutrition, resulting from deficient innervation and circulation, the skin is thinner than natural, sometimes remarkably attenuated, and sunk below the level of the surrounding integument. Its glandular apparatus participates in the atrophy; there is neither sebaceous nor perspiratory secretion, and the part becomes bald from loss of hair. With this exception, the surface of the skin is unchanged; the linear markings are perfectly regular, but finer than natural, and before the tint of color reaches the dead white of complete insensibility and atrophy, the patch has merely the appearance of being delicately fair and soft, like that of an infant, contrasting strangely with the often brown and olive skin which surrounds it.

Just as elephantiasis anæsthetica and elephantiasis tuberculosa, being merely varieties of the same disease, may coexist, so morphœa alba atrophica may be present with morphœa alba lardacea, and sometimes the anæsthetic form precedes the deposition which subsequently takes place, and becomes a stage of the lardaceous variety. This is the case in a lady now under our care, who has six or eight patches of morphœa alba on the front of the body. Three of these, of longer standing than the rest, are distinctly lardaceous; one is dense and hard only in the centre of the white patch, the skin around it being natural in texture, and simply blanched; while several of the more recent patches are thin, soft, and white, and delicately fair in comparison with the tawny skin into which they are, as it were, inlaid.

Morphœa alba atrophica occurs for the most part on the front of the trunk of the body, particularly wherever the integument is thin, as beneath the mammæ, at the root of the neck, on the abdomen, in the groins, and on the inner side of the arms and legs. Three or four times we have seen it on the forehead, where it resulted obviously from paralysis of a branch of the supra-orbital nerve. It existed as a groove, about half an inch in width, in the direction of that nerve; the skin was white, shrunken, and insensible, the borders of the affected track being slightly raised, and of a lilac tint. In an advanced stage of the disease, the skin sometimes becomes shrivelled and dried up, like parchment; this is more particularly the case over a hard surface, as upon the head.

The following is an example of morphœa alba of the forehead, occurring over the supra-orbital nerve, presenting itself in the first instance in the simple anæsthetic form, and subsequently taking on, in part, the lardaceous character. The patient first came before us in the winter of 1851, being then nineteen years of age, and stated that the disease had existed for two years. He first observed it after a fit of excitement, when the whole face was flushed, and contrasting with this flush there was a streak of white on the forehead like the wheal of nettlerash or that produced by a whip, only that it was not raised. The streak began at the inner end of the left eyebrow, and ran upwards to the margin of the hair. After a short time he perceived that the white streak had become permanent; and still later, that a small circular bald spot of area (alopecia areata) had formed on the summit of the head, to the left of the middle line, and at some distance from the end of the streak.

In March, 1855, he consulted us for the second time; the white streak had now become a nearly straight white band, about three-quarters of an inch in breadth, extending from the inner end of the eyebrow to the summit of the head, and there joining with the original spot of area, now considerably increased in size. On the forehead the central part of the band was raised to the level of the adjacent skin, by the deposition in its structure of the peculiar lardaceous substance. This deposit rendered the surface smooth and polished, obliterating the linear markings of the skin, and destroying its natural texture. And in place of the normal mottled redness produced by the capillary vessels, there was a coarse plexus of minute venules, the trunks of which dipped from point to point into the small spaces between the lobules of the morbid deposit. The venous plexus was not evenly distributed over the whole of the raised portion of the diseased skin, but was chiefly conspicuous in the central part, where it existed in small patches, and gave a reddish tint to the centre of the white. On either side of the elevated portion of the band, the morbid skin subsided below the level of the adjoining integument, and presented the characters of the atrophic form of the disease, pále, thin, and atrophied; no vessels whatever being perceptible in its structure. Beyond this groove, the surface gradually rose, and merged into the healthy integument, and the border of the sound skin presented the pale lilac blush which constitutes the ordinary limit of the patches of morphœa alba. We have thus brought under our eyes, as far as is possible in the living body, the actual process of the conversion of morphœa atrophica into morphœa tuberosa. Reaching the summit of the forehead, the broad white band meandered through the hairy scalp to the top of the head, following the course of the supra-orbital nerve, and, where that nerve ends, terminated in a round patch of alopecia areata (morphœa alopeciata). The gently undulating course of this broad band suggested to the mind the idea of a river as represented on a map, or the flexuous progression of a serpent: hence, probably, the origin of the term *ophiasis*, or *tyria*, applied by the ancients to this form of alopecia. The whole extent of the disease on the scalp presented the form of morphœa atrophica; the integument along the centre of the band and on the patch of area was so thin, that the finger seemed to touch the bone, and was perfectly bald, from the anæmic and atrophic condition of the skin. Along the sides of the band the integument rose to the level of the rest of the scalp, and was furnished with a few stinted, bent, and twisted hairs. The atrophic part of the morbid skin was deficient of sensation, but the tuberous portion was less so, and compared with our observations four years before, had recovered some of its sensibility.

Besides the progress made by the chief patch of the disease upon the forehead and head, the patient called our attention, at his last visit, to a white, depressed spot, a few lines in diameter, which had appeared on the left side of the nose, a little below the inner angle of the eyelids; and, further, to a similar appearance on the ala of the nose, which looked like a cicatrix, and had occasioned atrophy of the part. This latter had given rise to some little deformity, and had excited in his mind a not unnatural alarm for the safety of his nose.

We have mentioned that the disease appeared originally without any symptoms to denote its invasion; and during the whole period of its existence it has been the unsightliness of the patch, and not any suffering occasioned by it, which caused him anxiety. Except when excited by business, or his digestive functions are disturbed, he is not aware of any sensation in the part; but when any disturbance of circulation takes place from the causes referred to, he experiences a "heavy dead pain" around the edges of the patch on the forehead, and a prickling pain around those of the scalp.

At his visit to us in 1851 we prescribed for him iodide of potash in infusion of quassia, and the local application of the compound tincture of iodine. In 1852, he saw another surgeon, who called it "gangrene of the skin," and prescribed a mild mercurial course, with the local application of a solution of the bichloride of mercury. In 1853, he was seen by Sir Benjamin Brodie, who advised him full doses of sarsaparilla, and local frictions with the strong citrine ointment. He does not appear to have given any of these means such a trial as could influence a disease so deeply rooted, nor to have allowed his adviser the opportunity of regulating or modifying the treatment from time to time. In April, 1855, he returned to us, when we ordered him the cod-liver oil, half an ounce twice a day, and five minims of Fowler's solution of arsenic, with the same number of antimony wine three times a day, and local friction with tincture of aconite in combination with soap-liniment. As we have not seen him since, we are unable to report the success of this plan.

MORPHŒA NIGRA.

Syn. *Berat cecha*, Heb.; *lepra melas*, Gr.; *vitiligo nigricans; black morphew.*

Morphœa nigra resembles in origin and general symptoms the two preceding forms, but differs from both in the conservation of the pigment-forming function of the skin, which is increased instead of being suspended as in morphœa alba. The persistence of this function indicates a less degree of disorganization of the integument than in the two previous states; there is no condensation and hardening of the skin; and, if there be thinning, it is present in a considerably less degree than in morphœa atrophica. The degree of insensibility is about the same or somewhat less than in the other kinds; the patches are rarely sunk below the level of the integument, but sometimes are rendered prominent by œdema. Patches of morphœa nigra were present in all the cases of elephantiasis which have come under our observation, but we have not seen it independently of that disease; sometimes the patches are round, and not more than a quarter of an inch in diameter; at other times they may be as large as a crown-piece or the palm of the hand; in one instance the body was spotted all over with them.

The tint of color in morphœa nigra presents some variety; it is sometimes a brownish-yellow, sometimes brown, and sometimes so dark as to approach to a blackish hue. The pigment does not seem to be confined to the surface of the derma, but extends into it for some depth, not only in the walls of the glandular apparatus of the skin, where it might be expected, but also in the interglandular portion. When any erythema is mingled with the discoloration, the patches have a purplish hue; the cuticle is for the most part smooth and shining, and sometimes acquires an almost metallic brilliancy; at other times it is roughened by desquamation. In early stages of the disease there is often an excess of sebaceous secretion united with the discoloration, which gives the skin a greasy appearance, but later in the attack the patches are dry and devoid of secretion.

MORPHŒA ALOPECIATA.

Morphœa commonly produces a total disorganization and complete atrophy of the skin, and necessarily destroys the secreting functions of that organ; the perspiratory, sebiparous, chromatogenic, and trichogenetic functions are suspended or arrested, and the glandular and formative apparatus of those functions is atrophied, and ultimately obliterated. On the general surface of the body the patches of morphœa are smooth and bald, or the hair covering them is colorless or white; and when, as before related, the patch of morphœa is situated on the head, the integument is greatly thinned, and the hair-follicles are destroyed.

In the case of morphœa alba of the general surface of the skin, we have shown that the pathognomonic characters of the disease are such as to point to exhaustion of nervous power as their source; and we believe that another affection, more common than morphœa of the body, namely, alopecia areata, is a morphœa of the scalp and hair-bearing skin; in other words, a morphœa alopeciata.

The specific characters of alopecia areata, and especially of morphœa alopeciata, are, loss of hair in a patch of circular, and sometimes, when taking the course of a nerve, of lengthened form (ophiasis, tyria); loss of sensation; loss of color, from arrested chromatogenesis and diminished circulation of blood; and thinning of the skin, more conspicuous at the centre than at the border of the patch, sometimes approaching to a real atrophy. The surface of the affected patch is smooth, from a greater or less degree of obliteration of the papillary structure of the derma, from shrinking of the follicles consequent upon arrest of their function, and from absence or diminished force of the linear markings of the skin; and it is less sensitive than natural, or totally insensible, from altered nervous function, probably a consequence of morbid alteration of structure of the nervous fibrils supplying the affected spot of skin.

Alopecia areata is apt to occur at all ages, and in all ranks of life, but is more common in young persons than in the adult. It is sometimes permanent, more frequently transient, but always tedious, lasting sometimes for months, and sometimes for years. When the hair returns it may resume all the qualities of healthy hair, or remain short, white, and impoverished. It appears usually in the form of one or more circular patches, from which the hair falls off at once and suddenly, leaving a bald spot of considerable size. Sometimes, however, its origin is small, consisting in the fall of a few hairs only, and it then increases more or less quickly by the circumference. At other times the loss of hair extends to the entire head, and involves, besides, the eyebrows and eyelashes. These latter cases are usually inveterate, though we have seen the hair return in several instances. But setting aside all these varied appearances, the most characteristic form is that in which the spot is of considerable size, the skin white, thin, smooth, and polished, as though stretched by shrinking, and devoid of sensibility and every trace of hair, the very follicles appearing to be obliterated.

In children and young persons we are apt, and with a semblance of reason, to refer this state of the skin to defective nutrition: and it no doubt does result from defective nutrition; but a defective nutrition, originating in defective innervation. In the adult this explanation is more obvious, since the period of active nutrition is over, and the insensibility of the skin points more directly to a local disorder of a nerve. A common seat of the disease in the adult is the chin, where the bald, white, circular spot contrasts strongly with the hair-bearing skin, and is particularly obnoxious to the sufferer.

It not uncommonly happens that this local deficiency of action in a part of the skin is associated with general want of tone in the whole system, and the *treatment* demanded will call for the use of alteratives and tonics. At other times we have seen benefit result from the use of mild mercurials, in combination with the iodide of potassium, where a syphilitic affection had to be controlled; but the special treatment for morphœa alopeciata consists of arsenic employed as a cutaneous stimulant and tonic, and local stimulants such as acetum cantharidis, compound tincture of iodine, liquor ammoniæ, solution of bichloride of mercury, carbolic acid, tar, &c. For morphœa alopeciata of the scalp, plentiful friction with the hairbrush, in addition to the stimulants already enumerated, is indicated, together with the use of a stimulating lotion or pomatum. Where the scalp is denuded to a great extent, advantage is often gained by dipping the head in cold water, and exciting the skin afterwards by friction with a towel. In a few cases this state of the skin has been attended with general emaciation, quick pulse, and irritable temperament, when we have had recourse to cod-liver oil, in addition to the preceding local and alterative treatment. In general, the skin becomes restored to its natural appearance and the hair returns, although the curative change is always slow and tedious; but occasionally neither time nor treatment appears to have any remedial power over the affected skin, and the baldness becomes established permanently.

CHAPTER XX.

AFFECTIONS OF THE PIGMENT SYSTEM.

The pigment system of the skin has its seat in the rete mucosum. The disorders of this system, or the disorders of chromatogenesis, may therefore be regarded as diseases of the rete mucosum; and the rete mucosum being the formative layer of the epidermis, they may also be considered as diseases of the epidermis. The diseases treated of in previous chapters have been diseases of the derma, but this and the two following chapters will be devoted to the consideration of disorders affecting the epidermis, its mucous and its horny layer, the action of the disease taking place in the rete mucosum, and the horny epidermis suffering derangement of structure to a greater or less extent as a consequence.

The chromatogenous, or dyschromatous diseases, manifest their existence by a variation of color of the skin; the more common change is that of a deepening in hue of the natural dark pigment of the rete mucosum, constituting melanopathia, melanoderma, or melasma; in the second place, the predominating morbid tint may be yellow, as in freckles, and the disorder one of xanthopathia; occasionally a blue pigment has been noted as being present in the skin, and the deranged function has been termed cyanopathia; and, lastly, there may be an achroma, or total absence of color, and the skin may be perfectly white. This is the state which is termed leucopathia, leucoderma, or leucasmus.

In a tabular scheme the dyschromatous affections may be arranged as follows:—

Melanopathia,	Cyanopathia,
Xanthopathia,	Leucopathia.

MELANOPATHIA.

Syn. *Fuscedo cutis; nigredo cutis; nigrities; melasma cutis; melanoderma.*

When we compare the distribution of the pigment of the skin throughout the members of the human family, we are struck with two remarkable extremes of difference, as illustrated in the jetty black of the tropical zone and the fair complexion of the natives of colder climates. Between these extremes every shade of tint may be found in intermediate latitudes; and, indeed, by the alternation of the solar influence only, the pigment may be increased in those of fair skin, and, on the other hand, may be diminished in the dark to a very considerable extent; but we require to proceed no further than our own hearths for an illustration of the fact, that the fair complexion may be rendered dark by the stimulation of light during the summer months, and the quantity of pigment will be again reduced during the winter season. To state this fact in physiological language, the activity of the functions of the skin is increased during the summer, and under the stimulus of the sun; while in the winter season it is diminished to its minimum. One of the functions of the skin is the formation of pigment; and, under the stimulus of light and heat, and of the sun's rays, this function is greatly augmented, and the skin, consequently, assumes a darker hue.

But it is scarcely necessary to remark that the phenomena involved in the functions of the skin are not wholly referable to external agencies. That which the stimulus of light and of the sun's rays is to the skin, under natural circumstances, the stimulus of morbid action may be in a disordered state of the system. Hence we occasionally meet with instances in which the skin is altered in its color in a brief period of time, either temporarily or permanently, as one of the consequences of disease, this alteration being confined to a limited region, *melasma* *figuratum*, or being more or less generally diffused over a large surface, *melasma universum.*

Again, it is clear that especial organization must also contribute very largely to the differences of tint which are observed in the human race. The long winter of the colder climates, or protracted imprisonment in a darkened cell, would not blanch the skin of the negro any more than would the long blaze of light, and the intense heat of the torrid zone, confer upon the skin of the European the rich jet of the native African. We are yet to learn how far colonization for a number of years would give rise to these results. It is to especial organization that we must have recourse to explain the great difference in shade of color that exists among the inhabitants of the same island, and the differences which we often meet with in different parts of the body of the same individual. In persons of dark complexion, certain parts of the cutaneous surface always present a deeper tint than the rest. One of the natural changes occurring at puberty is the alteration of the skin of the sexual apparatus to a brown color, more or less deep in different individuals, while, in rare instances, the skin in this region presents a deep black. Haller, in his Physiology, relates a case of this kind. The alteration of color which takes place in the areola around the nipple of pregnant women is an analogous change. In some persons the cutaneous pigment in the genital region is partial in its distribution, and appears in the form of patches of various size. Again, patches of a darker color than the surrounding skin, but identical in every other respect, may be developed upon any part of the surface of the integument in individuals of every shade of complexion. Plenck seems to have been under the belief that the Tartars have naturally a mottled skin: "Cutis variegata nativa, in Tartarorum gente, tigridis instar;" while of another variety of maculæ cutis, namely, "cutis variegata morbosa," he observes, "Visa est ad semel in uno subjecto facies viridis, latus corporis dextrum nigrum, et sinistrum flavum."

The alteration of color which takes place around the nipple of pregnant women, is a curious physiological change, but one which comes so constantly before our eyes, as to meet with little attention. This deepening of color corresponds with that part of the skin of the breast which is termed the areola, but occasionally nature makes one of those singular aberrations from her ordinary laws, that stimulate our curiosity and interest. Such was the case in the following narrative, communicated to us by Mr. Jackson, of High Wycombe, Buckinghamshire. "Martha Weston, aged eighteen, came into the Union House in June, 1843, to be confined, being in the last month of her first pregnancy. My attention was directed to her by the matron, in consequence of an unusual darkness of the skin. Upon examination, I found the anterior surface of the body from the clavicles, downwards to about the middle of the thighs, of a negro blackness.

"From the girl's statement I learned that, shortly after she became pregnant, the areola around each nipple looked very dark, but no further perceptible change took place until she quickened, when an evident darkness of the whole breast was visible, extending upwards to the throat, and downwards to the thighs, gradually assuming a deep black color. Over the hips it extended laterally, but no part of the posterior surface of the body was affected. Her complexion was naturally rather dark, with black hair and eyes. Her health had been always good, neither had she experienced more than the usual degree of irritation resulting from pregnancy. At her labor, I was called in by the midwife to the Institution, in consequence of a presentation of the hand and umbilicus; turning was resorted to, and the girl did well. She left the house a month after her confinement, at which time there was no alteration in the blackness of the skin; but on my last meeting her, about a year afterwards, she assured me it had entirely disappeared."

MELASMA UNIVERSUM.—The following interesting case of general melanopathia was communicated to us by the late Dr. Pereira. "John Daniels, aged seventeen, weaver, applied at the London Hospital, on account of the dark color of his skin. He states that for some months past he has been changing color and becoming darker; and that his companions have annoyed him by saying that he is changing to a negro. His appearance is that of a dark-colored gypsy. The darkness of the skin, though general over the body, was most marked at the nape of the neck, and least so on the nose and upper lip. His hair is light-colosed, and his eyes gray; these, his mother states, have undergone no change during the alteration of the color of the skin. His mother is remarkably fair, and she tells me that his father is equally so; and that, until about fifteen months ago, the son was considered very fair. The darkening commenced in the summer; but the boy had not been particularly exposed to the sun prior to the change. He worked with his father at weaving, principally of black goods. The tint of the skin was brown, and in this respect differed from the slate-color induced by the use of nitrate of silver. It somewhat resembled that which I have seen produced by the inhalation of arseniuretted hydrogen; but in the latter case the sclerotic coat of the eye was discolored; whereas, in Daniel's case, the sclerotica was remarkably white.

"I carefully questioned both the boy and his mother as to the use of medicine, or of any other agent which could have induced this change of color in the skin, but without avail. The boy had taken no medicine, and, to the knowledge of himself and mother, had been subjected to no deleterious influences. The color obviously depended on some alteration in the quantity or quality of the coloring matter of the skin. It could not depend on the presence of any coloring matter in the blood, since neither the conjunctiva nor the mucous membrane of the mouth was altered in color. The total absence of desquamation and itching readily distinguished the case from pityriasis nigra. A blister was applied to the nape of the neck. After it had caused vesication, it was obvious that the dark color of the skin resided in the derma, and not in the cuticle. The mother states that the intensity of the color is not always alike, being sometimes much greater than at others. No great hopes being held out that medicine would effect the change going on, the boy ceased to attend the hospital after a few weeks."

In a case of melasma universum which we had the opportunity of seeing, through the courtesy of Mr. Acret, of Torrington-square, the blackness affected the entire skin, with the exception of the feet and the legs as high as the calf. The subject of this curious affection was a young woman, twenty-eight years of age, who had enjoyed good health up to the first of December, 1844. At this date, she suddenly became unwell, and suffering from nausea, took an antimonial emetic, which failed to procure vomiting. She was then attacked with typhus fever, and was seriously ill for somewhat more than a month, being unable, during the greater part of that period, to sleep, and being frequently delirious. Previous to the illness, menstruation was regular and the menses copious; but since her recovery, she has suffered from amenorrhœa, with much periodical pain, until the last three months. Her health at present is what she styles "good," that is, her strength is not impaired, but she is liable to headache, has an eczematous eruption on the scalp, and a dainty appetite.

It was on her recovery from the above illness that the change of color in the skin was first observed. Her hair and eyes are black, and her complexion was originally that of a brunette; but she has now the color of an East Indian. The darkest parts of the body are, the back of the trunk and the back of the hands and arms. On the face, the red tint of the cheeks blended with the black, and the yellow of the forehead and nose struggling for mastery with the deeper tint, gave her complexion a singularly Indian appearance. And the peculiarity of her color is heightened by the extension of the blackness to her lips, and in patches to the mucous membrane of the mouth. Even the teeth have a bluish tint, the lips and teeth seeming as if stained by the eating of black cherries. The sclerotic of the eyeball is brilliantly white and anæmic.

On close inspection of the skin, the blackness is seen to be not perfectly uniform; there are small patches in which the depth of color is greater than in others, the darker colored spots corresponding with the apertures of follicles. The areola of the nipples approached in depth of color to a negro blackness.

Another case, communicated to us by the late Dr. Sarti, was as follows: Pietro Nanni, a peasant, of St. Martino al Castagna, fifty years of age, having unluckily got into a fray, was fired upon and put in danger of his life. The shock caused a severe illness, and three months afterwards his skin gradually darkened, until it became quite black. The change was first perceived on his cheeks, and thence extended over the entire body, being greatest on the front and sides of his breast, the inner side of his legs, and the hands. With the termination of this case we are not acquainted.

Addison[1] called the attention of the profession a few years back to the association of melasma with disease of the suprarenal capsules, and has adduced several examples of this union, of which the following are the most striking. A baker, aged thirty-two, ill for three years, had, during that period, two attacks of obstinate cough, accompanied with extreme weakness. After the cessation of the cough the first time, his skin, previously white, began to darken; at the end of the three years it was so dark, that he had the appearance of being descended from colored parents. "The cheeks are a little sunken, the nose is pointed, the conjunctivæ are of pearly whiteness; the voice is puny and puerile." "He complains of a sense of soreness in the chest, about the scrobiculus cordis." There was no fault about the urine, and Golding Bird, under whose care he was, considered the case to be one of anæmia. He died, soon after these observations were made, of "acute pericarditis and pulmonic inflammation." On examination after death, besides disease of the lungs and pericardium, and a fragile state of the liver and spleen, the kidneys being healthy, "the suprarenal capsules were diseased on both sides, the left about the size of a hen's egg, with the head of the pancreas firmly tied down to it by adhesions. Both capsules were as hard as stones." Addison concludes from this case that "the slow and gradual inroads of the disease, and the remarkable excess of pigment, were sufficiently accounted for by the universality of the change that had taken place in the structure of both capsules."

---

[1] On the Constitutional and Local Effects of Diseases of the Suprarenal Capsules, by Thomas Addison, M.D. 4to., 1855.

A tide-waiter, aged thirty-two, of bilious temperament, having dark hair and a sallow complexion, was observed during the last six months of his life to be growing gradually dusky in complexion, until he became of a *dark olive-brown* color; and black pigmentary patches were developed on the mucous membrane of the inside of the lips. His duties were anxious, and exposed him to alternations of weather; but with the exception of an attack of rheumatism and occasional bilious vomitings, he had enjoyed good health until six months since, when he was seized with a bilious attack of greater violence than usual. On this occasion the vomiting, headache, and constipation were succeeded by delirium and temporary insensibility, these latter being followed by numbness and loss of power of the fingers and legs, and extreme debility, which continued for some weeks. Three months later he returned to his duties, but was again laid up with headache, vomiting and constipation; and two months after this was admitted into Guy's Hospital, where he died after twenty-seven days. His symptoms while in hospital under the care of Dr. Gull, were extreme physical depression and debility, sickness, with vomitings of mucus, containing a little altered blood; tenderness of epigastrium, constipation, clean tongue, cool skin, natural urine, small and feeble pulse, and anxiety of countenance. After death, the suprarenal capsules were found to contain "compact fibrinous concretions," which, "superficially examined, were not unlike some forms of strumous tubercle." "The brain, lungs, heart, spleen, liver, and kidneys were normal, but the mucous membrane of the stomach gave evidence of subacute gastritis."

A carpenter, twenty six years of age, of strumous constitution and intemperate habits, had observed during the four months which preceded his death black patches of discoloration upon the mucous membrane of his lips, a general change in his complexion to a yellowish and olive hue, and patches of black upon the face and in the axillæ. He had enjoyed good health until six months before death, when he was attacked with pains in the right leg, extending upwards to his back, and resulting in disease of the upper three lumbar vertebræ and lumbar abscess. He died twenty-seven days after admission into hospital, his death being preceded by extreme debility, torpor, sickness of stomach, hiccough, and typhoid symptoms. Dr. Rees, under whose care he was during part of his illness, discovered "white corpuscles" in his blood; after death, besides strumous deposits in the lungs, the suprarenal capsules were found "completely destroyed, and converted into a mass of strumous disease, the latter of all degrees of consistency."

The inference which is drawn from these cases, is, that whenever melasma of the skin, in conjunction with extreme prostration of the physical powers and anæmia, exists, without other perceptible cause, disease of the suprarenal capsules will be found after death. The kind of disease of these organs seems to present considerable variety, for of eleven cases recorded by Addison, both capsules were diseased in seven, and one only in four. Of the forms of disease, one was atrophy from inflammation; one, enlargement with induration; one, deposits of compact fibrinous concretions; four, scrofulous deposits; and four, malignant deposits. Addison expresses his "belief that the urgency of the symptoms, and the quick or slow progress of the disease, are determined by the activity or rapidity of the morbid change going on in the capsules, and by the actual amount or degree of that change; and that universal disease of both capsules will, in all probability, be found to prove uniformly fatal." This opinion does not appear to be borne out with accuracy by the evidence of his cases, for, of the total eleven cases now referred to, the period of duration of the disease, as ascertained in seven, ranges as follows: three years, one year, six months, four months, three months, two months. The four longest periods are those which correspond with disease of both capsules; the three shortest, namely, from four months to two months, with disease of one capsule only. The order of fatality as respects the nature of the disease was as follows: three years, enlarged and indurated; one year, enlarged and indurated, with tubercular deposit; six months, fibrinous concretions; four months, softened strumous deposits; four months, atrophy from inflammation; three months, malignant deposit in one capsule; two months, tubercular deposit in one capsule.

The subject, however, is in the infancy of its research, and we must accept Addison's observations as a valuable contribution to medicine, and as a basis for further investigation. It cannot be allowed that all cases of melasma are also examples of disease of the suprarenal capsules, any more than that every case of disease of the suprarenal capsules must be necessarily accompanied by the deposit of a dark pigment in the skin. Addison has very properly shown that melasma is only one of the symptoms, of a series of those which constitute the peculiar form of anæmia which he so forcibly describes. "For a long period," he writes, "I had, from time to time, met a very remarkable form of general anæmia, occurring without any discoverable cause whatever; cases in which there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease." "The disease presented in every instance the same general character, pursued a similar course, and, with scarcely a single exception, was followed, after a variable period, by the same fatal result. It occurs in both sexes; generally, but not exclusively, beyond the middle period of life, and, so far as I at present know, chiefly in persons of a somewhat large and bulky frame, and with a strongly marked tendency to the formation of fat. It makes its approach in so slow and insidious a manner, that the patient can hardly fix a date to his earliest feeling of that languor, which is shortly to become so extreme. The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than wasted; the pulse, perhaps, large, but remarkably soft and compressible, and occasionally with a slight jerk, especially under the slightest excitement; there is an increasing indisposition to exertion, with an uncomfortable feeling of faintness or breathlessness on attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth, and waxy appearance; the lips, gums, and tongue, seem bloodless; the flabbiness of the solids increases; the appetite fails; extreme languor and faintness supervene, breathlessness and palpitations being produced by the most trifling exertion or emotion: some slight œdema is probably perceived about the ankles; the debility becomes extreme, the patient can no longer rise from his bed, the mind occasionally wanders, he falls into a prostrate and half-torpid state, and at length expires." "The leading and characteristic features of the morbid state" are, anæmia, general languor and debility, remarkable feebleness of the heart's action, irritability of the stomach, and a peculiar change of color in the skin, occurring in connection with a diseased condition of the "suprarenal capsules." Furthermore, "the great distinctive mark of this form of anæmia, is the singular dingy or dark discoloration of the skin;" "a dark, dingy, or smoky looking discoloration of the integument." And Addison records his belief, that "the disease is by no means of very rare occurrence."

Returning now to the three cases of melanopathia, narrated by ourselves, with a view of ascertaining how far they accord with Addison's description, it will be evident that our first case, that of Martha Weston, must be looked upon merely as a physiological phenomenon. In the second case (John Daniels), Pereira speaks of the sclerotica as being remarkably white, but does not otherwise lead us to infer the existence of anæmia, or any constitutional disease; the discoloration had been in existence fifteen months when it came under his observation. The patient, in the third case, was decidedly anæmic, and the subject of some obscure organic disease, which may have been that of the capsulæ suprarenales; we regret, however, that we are unable to report her present state; she had been two years undergoing a gradual change of color, and, in compliance with Addison's views, ought by this time to be dead.

According to Addison, disease of the capsulæ suprarenales is attended with disturbance of the chromatogenous function of the skin, such disturbance tending to the production of an excess of black pigment. Upon the announcement of this proposition, we naturally inquire whether these organs, which have heretofore been considered of so little importance to the well-being of man, which we have been taught to look upon as mere vestiges of an organ that had fulfilled its office, and was no longer of any use, are really so influential in the economy of man, that a mere state of atrophy, or a tuberculous condition of one of them, is sufficient to set up a series of remarkable symptoms which result in the death of the individual in four months in one case, in one month in the other; and which possess the singular power of causing the development of an excess of pigmentary matter, the latter being not merely limited to the skin and mucous membrane, but in one case presenting itself as a true melanosis, "scattered in small masses over the omentum, the mesentery, and the cellular tissue on the interior of the abdominal parietes." In taking this view of the suprarenal capsules, we must not overlook their intimate relation with the great abdominal centre of the organic system of nerves, nor shut out from our minds the probable effects upon that centre of a disease which will necessarily involve many of its filaments; which, in one case at least, had extended to the semilunar ganglion, and produced fatty degeneration of a portion of that ganglion and of the adjacent plexus, and which, by producing irritation and probably disease of that plexus, might lay the foundation for those gastric symptoms, and that state of physical prostration and anæmia to which Addison refers. Admitting all this, we have, as an explanation of the phenomena indicated by Addison, namely, spontaneous or idiopathic anæmia, with melasma of the skin, and associated disease of the capsulæ suprarenales—disease of the capsulæ suprarenales, irritation or disease of the solar plexus, arrested hæmatogenesis, augmented chromatogenesis, exhaustion, death. In a word, the solar plexus is the actual source of all these successive phenomena, and the disease of the capsulæ suprarenales only the exciting cause. A state of irritation or disease of the solar plexus will explain all those symptoms which we have difficulty to comprehend as proceeding from such apparently insignificant organs as the suprarenal capsules. It will explain, also, how similar effects result from diversity in the nature of the disease of those organs; how atrophy, hypertrophy, induration, tubercular deposit, carcinomatous deposit, may all occasion the same series of symptoms; it will explain the arrest of formation of the red coloring matter of the blood, and the consequent augmentation of the white corpuscles; and it may be a means of explaining the hyperformation of pigment in the skin, and in other tissues of the body. And further, it will remove an objection which we should otherwise be inclined to set up, namely, the diversity in the forms of the melasma, described by Addison. For, as the case at present stands, every black patch of discoloration of the skin becomes the foundation of a diagnosis of diseased suprarenal capsules, and prognosis of speedy death; a line of argument which is clearly unfounded. But we cannot object, indeed we think it worthy of attentive consideration, to the diagnosis of irritation and probable disease of the solar plexus in these cases. We should strongly protest against a harmless chloasma being set down as a sign of a fatal cachexia; but our experience is altogether in favor of considering it a consequence of *irritation of the great centre of innervation of the assimilative organs.* But Addison goes further than this, and suggests the inference that the suprarenal capsules are the especial regulators of the black coloring principle of the body; for, in relation to a case in which there was simple extravasation of blood into one of the capsules, from obstruction of its vein by a malignant tubercle, he observes, "this case would render it probable that the excess of dark pigment, so characteristic of renal capsular disease, depended rather upon an interruption to some special function than upon the nature of the organic change; for, with the exception of the manifestly recent sanguineous effusion into its tissue, the capsule itself did not appear to have undergone any considerable deterioration." With such an inference we are indisposed to agree, and the physiology of the suprarenal capsules in no way inclines to such a conclusion.

MELASMA FIGURATUM is a partial form of melanopathia, generally circumscribed, but not unfrequently associated with a diffused duskiness of the skin, *fuscedo cutis*, of considerable extent. It is to this form of melasma that the term *ephēlis* (ephelis umbrosa, Franck) has been given; but as the word ephelis applies only to a cause, although to a cause that is far from uncommon, nevertheless, to one only of many causes, it is more consistent with a better knowledge of the nature of the disease, to adopt the term melasma or melanoderma in preference to ephelis. Plenck distinguishes seven varieties of Melasma, under the name of Ephēlis; three belonging to the local group, namely, solaris, ignealis, and a vesicatario; and four constitutional, namely, gravidarum, hepatica, dysmenorrhœalis, and hæmorrhoidalis.

Melasma figuratum is more frequently seen upon the face than elsewhere, but may be developed upon any part of the body. Its common seat is the forehead; next in frequency it is met with on the back of the hands, on the trunk of the body, and on the limbs. On the face and back of the hands it occupies a position which is most exposed to alternations of temperature, to the action of the sun and of fire, common causes of the disease. The face also is the seat of manifestation of many of the sympathies of the body, and the reflex phenomena of nervous irritation excited in the digestive and reproductive system are manifested, as in a mirror, on the forehead and upon the face. Melasma palpebrarum, or blepharal melasma, commonly presents itself in a diffused form, more highly concentrated near the edges of the lids than elsewhere, and commonly associated with anæmia of conjunctiva, and a dark liquid transparency of the globe of the eye, which we have designated by the name of *melasma oculi*. In countries where the charcoal brazier is much in use for warming the feet, a mottled form of melasma, ephelis ignealis, is met with on the inner side of the legs and thighs. A similar mottling is sometimes produced by varicose veins, and the lower extremities are especially liable to a yellow, black, or brown discoloration occurring in patches of variable extent, "maculæ livido-atræ tibias, potissimum senum, absque evidenti causa." Neither must we omit the melasmic blotches or maculæ which sometimes follow blisters, the patches of alphos, ulcers of the legs, and, in particular, syphilitic eruptions and ulcerations.

Looking to the constitutional origin of melasma, we see a reason why it should be more common in the female than in the male sex, and also why it should prove more obstinate in the former than in the latter. In twenty cases, seventeen were females, and only three males; the ages of these twenty ranged between twenty and forty-five, and the duration of the disease was: in ten, from two to five years, and in seven, from five to ten years.

Melasma frontis often assumes a peculiarity of figure which is not met with elsewhere; it is most concentrated along the line of the hair, and fades towards the centre, or, it is absent in the centre and assumes the shape of an arch; sometimes there is a central patch as well as the arched segment at either side; and occasionally the pigment takes the direction of the supraorbital nerves. A lady whom we know has a melasmic patch shaped like a horse-shoe on the middle of the forehead; the ends of the arch correspond with the inner extremity of the eyebrows, and two smaller curves proceed from these ends parallel with the eyebrows to about their middle.

Melasma is sometimes confined to a single region of the skin, as of the forehead, but is also very commonly dispersed over several regions at the same time; for example, in the twenty cases already mentioned, melasma frontis was present in thirteen of the number, but was alone in three only, the remaining ten cases presenting the following combinations: melasma diffusum, five; faciei, three; faciei et colli, one; and labii superioris, one. In one case the melasma occupied the cheek and the conjunctiva, and in another the dorsum of the hand and the popliteal region; while all presented examples of melasma oculi more or less perfectly defined. Moreover, two of the cases were associated with chloasma, a theme for future consideration.

A partial melasma has been described under the name of PINTA, as endemic on the western coast of Mexico. The affection is confined to the laboring classes, and is said to begin with symptoms of miasmatic fever, namely, shivering and nausea, followed by febricula, and lasting for some days. When the fever subsides, the skin is found spotted over with yellowish stains, particularly the face, chest, and limbs. The yellow stains become paler and paler until they are almost white, and then they gradually darken until they attain a negro-blackness, which remains permanently. The general surface of the skin desquamates, is more or less rough and inflamed, and sometimes falls into a state of ulceration; the perspirations are fetid, but the general health remains uninjured.

Melasmic stains of the skin are sometimes congenital, in which case they receive the name of *nævi pigmentosi*; and sometimes they are associated with an abnormal growth of the hair of the part, *nævi pilosi*. In a case at present before us (Oct. 1866), a boy three years of age, [illegible] half of the right side of the face is deeply colored with [illegible] and covered with a strong growth of thick black hair. The [illegible] the skin is uneven, in some parts raised and corrugated, and [illegible] in the distribution of its pigment; the tints varying from [illegible] yellow brown to deep black, the latter occurring in [illegible] the rest of the surface. The melasmic and pilous patch is continuous with the hairy scalp, but differs from the latter in the presence of pigment as well as hair, and its boundary line descends upon the forehead to the inner third of the eyebrow and eyelids, and from [illegible] in a curve towards the ala of the nose and angle of the mouth, and thence backwards across the lower jaw to the nape of the neck, the discoloration and pilous growth involving the ear as well as the rest of the skin. The boy has, besides, several large pigmentary [illegible] spots scattered upon his limbs. The mother of the child met with no shock during her pregnancy, and no hereditary tendency would seem to have prevailed. The special consideration of these cases belongs to the chapter devoted to the *eleventh group*, namely, of hypertrophic affections.

DIAGNOSIS.—The prominent feature of melanopathia, namely, color, is so obvious, and the existence of anæmia so striking, that errors of diagnosis in well-marked examples of the disease are not likely to occur; in doubtful cases it may be remembered that the cuticle is commonly unchanged in melasma, but is more or less broken up and furfuraceous in chloasma.

CAUSES.—Melanoderma obeys a double cause, namely, a *local cause*, such as the heat of the sun or fire and the reaction of heat after exposure to cold, or local irritation such as that occasioned by varicose veins; and a *constitutional cause*, under the influence of which the red corpuscles of the blood are changed into pigment particles, creating melanæmia, and afterwards deposited by way of elimination in the cells of the rete mucosum.[1]

Looking to the predisposing cause: nervous debility was present in [illegible]teen of the twenty cases already referred to, nutritive debility in four, and assimilative debility in three; while the remote predisposing causes were as follows: pregnancy and uterine derangement, [illegible] nervous shock, six; and the following, one each: rapid growth, climate, rubeola, syphilis, and the heat of the sun after parturition. Melasma frontis succeeded pregnancy on two occasions in the same [illegible]; and an additional predisposing cause seemed to contribute additional potency to the influence of the puerperal state in others; for example, the conjunction of rubeola and parturition, parturition and exposure to the sun, &c.

PROGNOSIS.—Grave or unimportant, according to the nature of the cause. If the irritation of the organic nerves be due to visceral disease, [illegible] to an aggravated form of melanæmia and leucæmia, the case will prove fatal; if the disease be slight, or simply functional, here is hope of cure. And cure may especially be predicted where the nervous irritation originates in deranged uterine function or in hysteria.

---

[1] For further researches into the pathology of melasma, see our essay, entitled "Melanoderma, or Discoloration of the Skin," in the *British Medical Journal* [illegible]

TREATMENT.—The treatment of melanopathia must be governed by the nature of the cause of the disease; in a large proportion of cases it originates in nervous debility; in a small number, in nutritive and assimilative debility. Our treatment must have for its object to renovate strength and nervous power. Tonics of all kinds are indicated, especially quinine and iron, and phosphoric acid and iron. In nutritive debility we may conjoin cod-liver oil with the tonics; and in assimilative debility regulate digestion and secretion before aiming at bestowing power. In the generality of these cases, particularly where all ordinary indications have been accomplished by the usual means, we have found the ferro-arsenical mixture of great value, of a strength sufficient to give two minims of Fowler's solution for the dose, three times a day. With this treatment it is also necessary to combine moral medicine and a generous diet.

The local treatment requires moderate stimulation, by means of friction and ablution with the carbolic acid or juniper-tar soap and the use of cold water. The bichloride of mercury lotion, one or two grains to the ounce, is frequently of great service; so also are frictions with the unguentum picis liquidæ and unguentum sulphuris, of each equal parts. We have in some instances employed with advantage a lotion of carbolic acid, a lotion of juniper tar with alcohol and soft soap, the unguentum creasoti, and the liquor carbonis detergens; and in obstinate cases have had recourse to the compound tincture of iodine pencilled on the surface, a saturated solution of iodine in glycerine, and a solution of potassa fusa, one part to eight of water.

MELASMA TINCTUM.—Persons who have taken nitrate of silver for a certain length of time are liable to be affected with a chemical alteration of color of the skin. In the first instance, this alteration consists in the suffusion of the surface with a bluish tint, which subsequently becomes a greenish-slate color. The discoloration takes place upon all parts of the surface of the body at the same time, but is most remarkable in those regions which are exposed habitually to the influence of light, as the face and hands; and in the latter situations it not unfrequently assumes a more or less deep black. The color is curiously modified in certain localities by admixture with red; hence, in the conjunctiva, and on the lips, it presents a livid brown tint, and on the general surface it is much deepened by those causes which, under other circumstances, would produce pallor; for the same reason the discoloration is more apparent upon persons naturally pale than in those who possess a fresh complexion. Once established, the discoloration produced by nitrate of silver lasts for the entire life of the individual, without alteration. In some few instances only it has been observed to diminish slightly in the course of years.

TREATMENT.—Few persons afflicted with this deformity would feel disposed to endure it calmly, without making some attempt at its removal; hence, it becomes necessary to inquire what remedies might be employed with the best chance of a successful result. The iodide of potassium has been proposed for this purpose: and, as in moderate doses it is a safe remedy, it deserves a trial, and may be continued for a length of time. Its known powers of removing nitrate of silver stains from the surface of the skin are suggestive also of its use as a local application. For the same reason, a lotion of the bichloride of mercury, with or without the hydrochlorate of ammonia, is a judicious remedy.

XANTHOPATHIA.

Syn. *Xanthoderma; xanthochroia; flavedo cutis.*

XANTHOPATHIA, or yellow discoloration of the skin, consists in the deposit in the cells of the rete mucosum of a yellow coloring principle, and is the foundation of diffused pigmentary yellowness of the cutaneous surface, *flavedo cutis*, the yellow tints of cachexia cutis, the maculæ luteæ of newly-born infants, the circumscribed spots of lentigo, and, in combination with a small proportion of black, the yellow and reddish-brown of chloasma. Xanthoderma represents the yellow complexion of certain of the races of mankind, as does melanoderma that of the negro; and the xanthic element, like the melanic element, is doubtless derived from the coloring principle of the blood. We see this coloring principle developed in the varying tints of a bruise; and we have evidence of its presence in the economy in the coloration of the bile and of the urine. In a free state, namely, as a secretion of the sebiparous glands, we have another illustration of the xanthic coloring principle in stearrhœa flavescens; and in association also with the sebiparous apparatus, a subcuticular discoloration of the eyelids, which we have designated a yellow hypertrophy of the epithelium.

The diseases which call for special consideration under the head of xanthopathia are: Lentigo and Chloasma.

LENTIGO.

Syn. *Epichrosis lenticula*, Mason Good; *phacia: freckles; sommersprossen*, Germ.

LENTIGO is the small lentil-shaped and lentil-colored spot commonly met with on the face of children and young persons, in considerable numbers, and popularly termed *freckles* (lentigines). The spots are small, round, and yellow, of various size, rarely larger than the diameter of a split pea, and often considerably smaller. They are seated in the rete mucosum, and most abundantly distributed on parts of the body exposed to the influence of the light and heat of the sun; as the face, neck, and hands; and on the face they are most numerous around the eyelids, upon the forehead, and upon the cheeks.

The color of the lenticular spots offers some variety, in accordance with the complexion of the individual; in red-haired persons they are saffron-colored, and in children of different complexions may be traced a series of tints, running through every shade of yellow, to light brown, and even green. Plenck seems to have been most familiar with the browner kinds; for he says, "lentigines sunt maculæ fuscæ, quæ, colore, figurâ et magnitudine, lentes referunt."

Lentigo is sometimes a congenital affection, appearing soon after birth, and continuing through life; more commonly, however, it prevails during the ten years from ten to twenty, and is more frequent in persons of light complexion and light hair, than in those possessing a darker skin. There is, however, a form of lentigo, which occurs upon the covered parts of the skin, *lentigines frigidæ*, or cold freckles, which are more common in adult life than in the young; these latter result from some derangement of the coloring principle of the skin, referable to internal causes, and except for their size, belong to the consideration of malasma rather than of xanthoderma.

The exciting *cause* of lentigo is the operation of light and heat upon the skin, and in particular the sun's rays; but there doubtless exists a predisposing cause, in a weakness of structure of the skin, and a sensitiveness to irritant impressions. Cold freckles obey a constitutional cause, are met with in men as well as in women, and are favored in their development by a weak state of the cutaneous tissues.

TREATMENT.—The intention of treatment in lentigo should be to promote a healthy tone and healthy nutrition of the skin; to this end the parts should be washed once or twice a day with some mildly stimulating soap, such as that of juniper tar or carbolic acid, and cold water, and a moderately stimulant lotion subsequently applied, such as that of the bichloride of mercury in emulsion of bitter almonds (gr. j–ij ad ℥j); a similar solution in spirit, with elder or rose-water; or a lotion of borax and rose-water. Plenck recommends acetum armoraciæ; pasta amygdalarum amarum; fel taurinum; lac sulphuris; aqua phagedænica (yellow wash); and solution of sulphate of zinc. Fel taurinum is a favorite cosmetic remedy among the older physicians. Lenticulæ, says Celsus, "are cured by galbanum and carbonate of soda, rubbed down with vinegar to the consistence of honey." The paste is to be rubbed upon the skin, left for some hours, and then washed off.

CHLOASMA.

Syn. *Pityriasis versicolor*, Willan; *maculæ hepaticæ; ephelis hepatica; hepatizon; leberflecke*, Germ.

CHLOASMA is a discoloration of the skin of a light yellowish or reenish-brown tint, having its seat in the rete mucosum, occurring n small patches, or blotches of considerable extent, distinctly circumscribed, and developed symmetrically on the trunk of the body, the eck, and occasionally on the limbs.[1]

Chloasma is popularly named *liver-spot*, probably from its color, or ssibly from some theory of its origin; but the color is subject to rtain variations, ranging from a reddish and yellowish tint to a ght or even a dark brown or greenish hue; the latter tint having ggested the term chloasma. These differences of tint correspond with the complexion of the patient, the color being light in fai deep in dark persons. The patches of which it is composed are times small and separate, like a cluster of islets or fleecy cloud at other times large and extensive, and bounded by a map-lik line. The common situation of the discoloration is the trunk body, beginning at the axillæ, extending upwards upon the sho and neck and downwards upon the flanks, or beginning at the and extending upwards upon the abdomen and downwards for distance upon the thighs. The patches are developed in a s manner upon the back, and are also met with in the flexures elbows and of the hams, and sometimes upon the inner side arms and legs.

---

[1] *Vide* Portraits of diseases of the skin, Plate XXXV. A.

Next to color and figure the most striking character of chlo pruritus, and that also is very variable. We have met with p who have complained of intense suffering from itching, and w found it convenient to designate such cases by the name of *ch* *pruriginosum*, while in the greater number the pruritus was t and in some there was no itching at all.

Another of the symptoms of chloasma is desquamation, a forms no exception in variety to that which prevails in the symptoms. Occasionally there has been no trace of desquamat exfoliation, the predominating symptom being color only, and cases we have distinguished as *chloasma pigmentosum;* while in the exfoliation and desquamation have been the first appeara catch the eye, and we have felt the necessity of employing the *chloasma furfuraceum.*

In brief, we have sometimes seen chloasma presenting the c ters of an erythematous redness, and entitling itself to the den tion of *chloasma erythematosum,* while at other times its char were best distinguished by the terms *pigmentosum, pruriginosu* *furfuraceum.* It is evident that chloasma is not a mere alterat color, like melasma and lentigo; but that it is associated ver monly with a degree of hyperæmia of the skin, and when hype exists, there is more or less alteration of structure of the rete sum, and a furfuraceous breaking up and desquamation of the e mis. It is this latter character that has occasioned the con between pityriasis and chloasma, and has gained for the lat synonym of pityriasis versicolor, while a chloasma with a deep of pigmentation has been termed pityriasis nigra.

According to our views of the pathology of chloasma, th mucosum and epidermis present a degeneration of structure, in the primary granules of the cells take on a morbid growth and pe proliferation. This state of the cell-tissue we have termed *gr* *degeneration;* and when a portion of the morbid cell-tissue is in the field of the microscope, the granules may be seen in vast bers. By others these granules are regarded as mucedinous and have received the names of microsporon furfur and epiderm ton. The color of chloasma is supposed to be due not to anim ment, but to the coloration of the supposititious plant, and the d mation to result from the breaking up of the horny tissue is by the growth of the plant, and by the absorption of its e and that of the rete mucosum, for the purposes of nutrition parasite; in the language of this theory, the granules are spo- id the sporules constitute the plant.

asma prevails somewhat more frequently among males than females; the ages most favorable for its development ranging teen to thirty, and its duration from one to ten years. It is e a chronic complaint, and is apt to recur from time to time nsiderable period.. We have found it to be sometimes asso- with melasma figuratum and melasma oculi, and sometimes zema; while in one instance it accompanied melasma oculi and areata.

NOSIS.—The pathognomonic characters of chloasma are its sh, brownish, and greenish patches, some small and others re; its principal seat, upon the trunk of the body and flexures oints; its symmetrical position, either excentric or concentric; , sometimes present and sometimes absent; and cuticular exfo- also absent occasionally. Its color distinguishes it from ordi- tyriasis, as it does also from melasma.

E.—The cause of chloasma is a debility of tissue, originating ous sympathy with the visceral organic system, and chiefly e assimilative organs. In its pathological nature it is a hyperæ- ompanied with a morbid alteration of the epidermic cells, and mulation of pigment in the rete mucosum. But according to porters of the vegetable theory, it is a parasitic fungus, coming ithout, growing in the rete mucosum at the expense of the f the cell-tissue, breaking up the horny epidermis into foliace- furfuraceous scales, and itself constituting the chief bulk of quamating substance, the color of the chloasma being in fact r of the fungus. According to the same theory, chloasma is ous, a belief which does not accord with experience.

predisposing cause in thirty cases, was, assimilative debility in five, nutritive debility in three, nervous debility in one only; remote predisposing causes were as follows: dyspepsia, alter- of seasons, variations of climate, pregnancy and menstrual dis- general nervous weakness, eczematous diathesis, affliction, hoids, rheumatism, leucorrhœa ,sedentary pursuits, alternation and heat, and hereditary diathesis.

NOSIS.—Chloasma is harmless, although disagreeable to the from its appearance, and sometimes annoying from insupporta- ing. It betrays no serious constitutional disturbance, is obsti- d recurrent, but eventually gets well.

TMENT.—The treatment of chloasma must be directed to the e and assimilative organs and secretions; and the best reme- this purpose are, sulphate of magnesia with quinine or a bit- sion; or, nitromuriatic acid with bitters. In obstinate cases be desirable to have recourse to the ferro-arsenical mixture. local treatment is one of stimulus of the skin, ablution with the tar or carbolic acid soap, the cold tub in the morning, and spongings with the bichloride of mercury lotion, two grains to the ounce; or with a lotion of sulphite of soda, an ounce to the pint. In very obstinate cases the solution of the pentesulphide of lime will be found useful, or friction with an ointment composed of equal parts of unguentum picis liquidæ and unguentum sulphuris: these latter remedies should be used at night and washed off with soap in the morning, and they are at the same time the most effectual agents for the relief of pruritus. The unguentum creasoti is a useful application for the same purpose.

CYANOPATHIA.

CYANODERMA, or blue discoloration of the skin, is identical in its mode of manifestation with melanoderma and xanthoderma; but there is this difference between them, namely, that black and yellow are natural animal pigments, and are developed normally in the skin of the human family, their extremes being represented by the Negro and the Mongol; but blue pigment is an abnormal product resulting from morbid chemical combinations, and is consequently less frequent. Billard d'Angers has reported a case of cyanoderma of the forehead, face, front of the neck, chest, and abdomen, in a young girl; and he makes the curious observation that she blushed blue instead of red. Blue pigment has also been seen in the sebaceous secretion in stearrhœa cæruleum, in the perspiratory secretion, and also in the urine.

LEUCOPATHIA.

LEUCODERMA vel LEUCASMUS CUTIS is an absence of pigment in the skin, an achromatous condition of the rete mucosum, and presents itself sometimes as a general affection, *leucasmus universalis*, and sometimes as a partial affection, *leucasmus figuratus*.

LEUCASMUS UNIVERSALIS.

Syn. *Epichrosis alphosis*, Mason Good; *achroma; alphosis; albinismus*.

General achroma of the skin is best illustrated in the albino, in whom there is a total absence of pigment, not only in the skin, but also in the hair and in the choroid coat of the eyeball. The absence of color is in this case physiological, and frequently hereditary; but as far as the individual is concerned, it is a state of disease, for it interferes with his comfort in a serious degree; he is almost blind by day, and only sees as well as other men in the gloom of evening and at night.

Albinoes are met with among all races of mankind, among the dark-complexioned nations of the south, as well as among the fair-haired inhabitants of the coldest regions of the earth. Their skin is of a milk-white color, the hair fair, sometimes silvery white, and usually soft and silky; sometimes it is harsh and wiry in texture, and the entire body is covered with a soft white down. The eyes are red, the iris pinkish and sometimes bluish. There is intolerance of light, the pupil is small, from the contraction of the iris to exclude the luminous rays. and the person bows his head habitually towards the ground, in order to shadow the retinæ as much as possible. At dusk, however, when the luminous rays are fewer in number, the albino rears his brow, and walks erect, his eyes are no longer overwhelmed by excess of light, and he is enabled to see surrounding objects in the night of other men. The albino is usually short of stature, and weakly in constitutional power.

Albinism is congenital; but sometimes accidental in its development, arising without any apparent cause, upon some part of the body, and thence extending to the entire surface. Instances of accidental general leucoderma have only been observed among the natives of Africa.

An example of complete albinism in the negro, *alphosis æthiopica, leucæthiopes,* might have been seen frequently in the streets of London, a few years back; the subject was a tall, sickly-looking man, who styled himself Henry Alexander Commotius Stewart, the African Albino. This man was born in New Providence, of black parents, his father being a negro from Guinea, and his mother a native of the island of Antigua, descended from African slaves. His four brothers and sisters were all black. He is tall, has a complexion like that of a dead leaf, sprinkled over with large and irregular freckles, light-colored eyes, and a light red woolly hair, surmounting features obviously bearing the African stamp.

LEUCASMUS FIGURATUS.

Syn. *Epichrosis pœcilia,* Mason Good; *ephelis alba; cutis variegata; piebald skin.*

Partial leucasmus is the common form of pathological achroma, and occurs in patches, usually of a circular figure, and developed both on the trunk of the body and on the limbs. Leucasmus is not uncommon in the black races (pied negro), sometimes hereditary and sometimes accidental, and in the latter case is very possibly a simple arrest of pigment-formation, from disordered innervation and nutrition. But amongst those who possess normally a less degree of coloration the disorder of chromatogenesis is more general; for not only is there an absence of pigment on the parts affected with leucasmus, but an excess of pigment on surrounding parts or diffused over the rest of the body. We have constantly before us examples of pure melasma, but never cases of pure leucasmus, for leucasmus is always associated, in a greater or less degree, with melasma.

In our "portraits of diseases of the skin"[1] is represented the appearance of the skin in a gentleman, who, originally of fair complexion, became brown (melasma), and subsequently lost the cutaneous pigment on various parts of the body (leucasmus). Several white patches made their appearance on the face; one nipple was blanched, the other was as dark as that of a woman far advanced in pregnancy; and, as if to render the case still more remarkable, the lost pigment was accumulated on the side of the trunk in blotches of deep black. He had been undergoing this change for seven years when he came first under our observation. A strange case of partial leucasmus is recorded also in the fifty-first volume of the "Philosophical Transactions." The discoloration of the skin said to be so common on the west coast of South America, amongst the spurs of the Cordillera mountains, and named CARATE, is a partial leucasmus in the black, and a melasma in the white races. Bonpland mentions having seen it on the banks of the Magdalena River in New Granada, and remarks that it has a tendency to make the blacks white, and the whites black; it often produces a marbled appearance of the skin, is very common, but apparently independent of any disorder of the general health. The spots were most frequent on the arms, breast, and face, and presented various degrees of whiteness, and, in some instances, were of a crimson red color.

---

[1] Plate XXXIII. H.

If we may judge from so small a number as twelve cases, leucasmus would seem to be more common in the male than in the female, and in the proportion of seven to five. Ten of these cases commenced between the ages of fifteen and forty, four out of the number occurring between fifteen and twenty, and four between twenty and thirty; one at the age of nine, and one at fifty-four. The duration of the disease at the time of treatment ranged between one year and five, in six cases; between five years and ten, in three; and between ten years and twenty, in two; one having lasted twenty-seven years.

Ten of the twelve cáses now referred to were examples of leucasmus figuratus, associated with melasma diffusum; in one case the leucasmic spots were small and elongated in form, resembling cicatrices, *leucasmus maculosus;* and in another the bleaching was confined to the edge of the upper eyelid of one side, and implicated six or eight of the cilia, which were also white.

When leucasmus attacks the hairy parts of the body it is not uncommon for the hairs growing upon the spot to be white. In one of the above cases a circular leucasmic spot occupied the summit of the forehead, and the hairs were completely bleached; in a man of forty, who had spent four years in the Greek archipelago, the skin and hair of the axillæ and pubes were snowy white, and the penis and scrotum mottled; and we have in remembrance a young lady who had one patch of leucasmus on the side of the scalp, from which there issued a solitary lock of white hair. On the other hand, the surface of the skin may be bleached without implicating the growing hair.

Leucasmus very commonly begins at the extremities of the body, as the fingers and toes; next in frequency it appears on the lips, the face, and neck; in the neighborhood of the axillæ and groins; on the abdomen, and on the scrotum and penis. On the scrotum it sometimes assumes the form of longitudinal streaks. In India it has been observed to be more common on the sea-coast than elsewhere.

There is usually no symmetry of arrangement of the blotches; they are defined by a sharp edge, and the skin immediately around them presents a deep tinge of black, which subsides by degrees into the general duskiness of the melasmic skin. The leucasmic skin is in nowise altered in structure, but has the appearance of being less vascular and more delicate in texture than the adjacent parts, and is evidently less sensitive to the impression of stimulus.

DIAGNOSIS.—The pathognomonic characters of leucasmus are the whiteness or bleaching of the skin without alteration of structure; and, as we have seen, leucasmus being in its essence a derangement of pigment-formation, it is commonly associated with melasma to a greater or less degree. The white patches of elephantiasis and morphœa alba always indicate a morbid alteration of structure combined with the loss of color.

CAUSE.—Leucasmus is a neurosis, and the result of weakened innervation of the skin, the excitant being commonly referable to the organs of assimilation or reproduction. Occasionally, and especially in India, it may depend upon the operation of a local irritant. Of the twelve cases mentioned above, eight were examples of nervous debility, three of assimilative debility, and one of nutritive debility. And the remote predisposing causes were as follows: menstrual irregularity, excess of mental labor, climate of India, gastric disorder, sudden alternation of heat and cold, typhus fever, and smallpox. In some instances several of the above causes were successive.

PROGNOSIS.—Where this affection is in the main physiological, as it is in India, it is comparatively unimportant, excepting as a deformity. An Indian gentleman, suffering under the complaint, remarked that, in his case, the color had returned on most of the original patches, but that new spots were developed from time to time. Even in Europeans the disease is not inconsistent with a moderate state of health of the body; and it only becomes serious from its neurotic sympathies.

TREATMENT.—Regulate digestion and secretion, give vigor to assimilation and tone to innervation, and, at the same time, apply a healthy stimulus to the skin. These are the general indications for the treatment of leucasmus, as they are those for the management of all the dyschromata.

To this end a regular and nutritious diet and healthful hygienic conditions materially conduce. Next tonics; digestive tonics, blood tonics, nerve tonics, and, at the proper time and in proper doses, the ferro-arsenical mixture. The local treatment should consist of cold ablutions daily, the use of soap and friction to the skin, and stimulant applications to the affected part, such as lotions of the bichloride of mercury, carbolic acid, acetum lyttæ, compound tincture of iodine, iodide of potassium combined with soft soap, sulphurous acid, and frictions with a compound ointment of sulphur and tar.

CHAPTER XXI.

PHYTODERMIC AFFECTIONS.

THE PHYTODERMIC or DERMATOPHYTIC AFFECTIONS are diseases involving the structure of the rete mucosum and epidermis, and they present the character in common of developing a morbid tissue resembling that of a fungus plant or mucedo; hence these diseases have also received the name of NOSOPHYTA. The seat of the morbid tissue is the rete mucosum and hair; and in the rete mucosum it gradually rises to the surface by the detrition of the horny epidermis and by the exfoliation of the lining membrane of the follicles, until it is found to pervade the whole thickness of the epidermic structure.

The morbid or phytiform tissue is composed of globular nucleated granules, and these granules have the properties of proliferation and growth; by *proliferation* they increase in number without change of figure; by *growth* they become elongated into diaphragmated cylindrical shafts, and have the power of throwing off shoots from point to point, and assuming a branched or phytiform character; the medium of growth being the division of their nuclei. In botanical language these elements are termed: the nucleated granules, *sporules*, or seeds; the cylindrical and ramified shafts, *mycelium;* and as they resemble in every respect mucedinous fungi, they have been classed with those vegetables, under the names of Microsporon, Trichophyton, and Achorion. The microsporon and the trichophyton are composed almost wholly of sporules, with little or no mycelium; the achorion is more complicated in structure, and consists of sporules or seeds, sporidia or seed vessels, and mycelium. The difference between them seems to be one of nourishment: on the trunk of the body, where the follicles are small and only scantily supplied with capillaries, the microsporon is found; in the substance of the hair, also poor in nutritive fluids, the sporular trichophyton exists; but in the highly vascular hair-follicles the achorion finds the supply of nutrition suitable for its greater growth and development.

And what is this phytiform growth? Is it, as we maintain, an alteration of structure of the elementary components or granules of the cell tissue of the rete mucosum? or, is it an independent organism, a plant originating from a sporule or seed, conveyed accidentally to the skin, fixing itself in the skin, drawing nourishment from the skin, and growing in the soft cell-tissue of the rete mucosum, at the expense of the nutritive fluids of the skin, just as a lichen or a fern may grow upon the bark of a tree? Is it a parasite figuratively as a blood-corpuscle or an epithelial cell may be a parasite, or is it a parasite actually? The latter is the theory maintained by many, and that theory is embodied in the expression, "parasitic diseases of the skin;" and that no mistake should arise, the parasitic plants are arranged by the side of the parasitic animals, the acarus scabiei and entozoon folliculorum.

The question is important, not so much in a practical point of view as in its relation to physiology. We maintain that we have seen the cells of the rete mucosum passing through those stages of growth which have converted their nuclei into granules, the so-called sporules; we maintain that the granular condition is the normal fœtal structure of the young epidermal cell, and that the morbid condition in question is an arrest of development of those cells at their fœtal stage, and the cause of their consequent modification of destiny no longer to rise through those higher stages of animalization which culminate in the production of horn, but doomed in their crude condition to the lowest function which belongs to immature organic matter, namely, poliferation. We can find no better word to express this degradation of structure than the term "granular degeneration."

To return, however, to the disease before us, this phytiform tissue is an undoubted fact; its seat is also admitted; we have now only to say that it constitutes the pathological element of four separate diseases, as follows:—

Favus, Sycosis,
Trichonosis, Chloasma.

In favus, the phytiform tissue was first observed, and the fungus is termed achorion Schoenleinii;[1] in trichonosis and sycosis the sporular form of the fungus is met with under the name of trichophyton tonsurans; while in chloasma the fungus is also sporular, and is named from that circumstance, and from giving rise to a furfuraceous condition of the epidermis, microsporon furfur, and epidermophyton. These diseases, therefore, having a common pathological element, admit of being grouped together, and consitute a veritable epiderminosis.

Besides their common pathological element, the epiderminotic affections have several other points of resemblance; namely, their seat in and around the follicles of the skin, their destruction of the epidermis and hair, and their epidemic and possibly their contagious nature. If the phytiform substance be a real plant, and the granules real sporules, the contagion of these diseases should be positive and unquestionable, which we cannot admit to be the case; and we are not helped in this matter by experiment; for the proliferous granules of aborted cells would retain their proliferous properties under favorable conditions, such as inoculation, and might continue the form of growth which belonged to them, without giving sanction to the belief that that was their normal mode of transmission.

A strong objection to the mode of contagion admitted by the phytopathologists is involved in the fact that the disease begins, not upon, but under, the horny epidermis; and to reach the bed in which it grows, the sporule must have the power of perforating the horny cuticle, a process which we believe ourselves warranted in declaring a physiological impossibility, while another argument against the contagion theory is the symmetry of development of one of the diseases, namely, chloasma. Contagion by seed implies the growth of the plant wherever the seed falls; and in the case of the scalp and face, there is nothing opposed to this view in the mode of distribution of the morbid patches; but the symmetrical disposition of the patches of chloasma obeys another and a vital law, one appertaining to the individual, and indicative of an action of the nervous system; it is, in fact, a neurosis.

---

[1] ACHOR is a name given to a small follicular pustule of the scalp. The term is at present disused, in consequence of the difficulty of identifying with exactness the pustule intended to be defined. The Greek word αχωρ signifies scurf or dandruff, αχυρον meaning "chaff." The term would therefore seem to have been applied rather to the thin scale left by a pustule than to the pustule itself. Achorion is a derivative of achor, and Schoenlein the name of one of the early observers of the dermatophyta, which were discovered by Remak in 1836.

Favus and sycosis being diseases of the hair-follicles chiefly, and trichonosis being a disease of the hair chiefly, their description will be found in the chapter devoted to the hair and hair-follicles. Chloasma is remarkable, principally, for the altered pigmentation by which it is accompanied, and is therefore treated of in the chapter on chromatogenous affections, although as an epiderminosis it also occupies the follicles of the skin, and the interfollicular rete mucosum.

The reader will find the present subject more fully discussed in a paper "on the phytopathology of the skin and nosophytodermata; the so-called parasitic affections of the skin," published in the British and Foreign Medico-Chirurgical Review for January, 1864.

CHAPTER XXII.

UNGUAL AFFECTIONS.

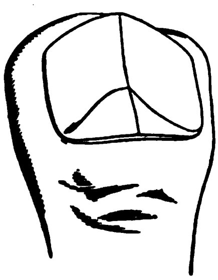
The disorders of the nails are referable to alterations in the disposition of the skin around the margin of the nail; in the development, growth, color, and texture of the nails themselves; and to inflammation, suppuration, and ulceration of the matrix and adjoining soft parts.

In reference to the first of these alterations, we sometimes meet with cases in which the epidermis of the margin of the nail-follicle remains attached to the surface of the nail, and advances with its growth, until the nail is more or less completely covered with a thin film. This is termed *pterygium unguis*. When less complete, the epidermis is apt to break up into little bands, which curve back and project from the skin around the root of the nail, giving rise to much inconvenience, and often, from being accidentally torn, causing soreness and tenderness of the skin. These little ragged bands of cuticle are called *agnails*, on account of the pain and suffering which they not unfrequently occasion. At other times, instead of growing forward, the cuticular margin of the follicle recedes, and exposes the root of the nail. This affection is rare, but has received the name of *ficus unguium*. Rayer remarks that he has observed it among curriers; we have seen it a few times where there existed a chronic state of inflammation of the nail-follicle.

Abnormal development of the nails is evinced in the occasional congenital absence of those organs; in their disposition to shed from time to time, with and without apparent cause; in their irregular shape, their occurrence in greater number than natural, and their abnormal position. The *congenital absence* of one or more of the nails is rare, but such cases are sometimes seen. Of the *fall of the nails* (lapsus unguis), we have met with several examples, in which they were regularly shed; new nails being formed beneath, while the old ones were becoming loosened previously to falling off. This morbid peculiarity has been recognized by pathology, and has received the name of *alopecia ungualis*. More frequently, the fall of the nail results from inflammation of the matrix, as in scarlatina, syphilis, &c.; and chronic inflammation of that organ, induced by local injury, burn, frost-bite, or arrest of nutrition, as in elephantiasis Græcorum.

Faulty shape of the nails, *deformitas unguium*, usually results from some disturbance of the secreting organ, the matrix, and sometimes from malnutrition, the consequence of deficient innervation, as in cases of paralysis. The nail may be unnaturally long or short, too broad or too much compressed at the sides, *arctura unguis*, too prominent, too flat, or too much arched or curved. Sometimes the nail projects longitudinally, like the angular ridge of a house-top, and, when thickened, has rather the character of a talon than a nail; sometimes it is concave on the surface, the direction of the concavity being longitudinal, or horizontal; and sometimes it is remarkable for its curve over the end of the finger, as in the *ungues adunci*, the arched and hooked nails so frequently seen in scrofulous and consumptive persons. Now and then we meet with *supernumerary nails*, generally in the form of two rudimentary nails blended together, evincing an intention of bifurcation of the finger or toe. And, occasionally, from some accident of development, we find the nail occupying an *abnormal situation*. The most remarkable illustration of the latter phenomenon is the production of a nail-like growth at the extremity of amputated fingers; even on the stumps of the first and second phalanges, where no rudiment of the original matrix can have existed.

Fig. L.



Abnormal growth of the nails is illustrated, sometimes by deficient growth, sometimes by growth in excess, and sometimes by unnatural growth. We have met with instances in which the growth of the nail has been so remarkably slow, that they might almost be taken for examples of complete arrest of growth. In other cases, the growth of the nail has been as striking for its rapidity or extent; the nails sometimes attain an enormous size in boucnemia; and an instance of extraordinary growth of the nails is recorded by Saillant, as occurring in a woman named Melin, and named from this peculiarity the "femme aux ongles."[1] Where there has been neglect, as in bedridden and elderly persons, the nails are apt to acquire an extravagant size. We have in our possession several toe-nails of this kind, measuring two and three inches in length. Rohout, in a paper addressed to the Academy of Sciences of Paris, has described a toe-nail which measured nearly five inches. Rayer mentions two great toe-nails which measured three inches, and were spirally twisted like the horns of a ram; and Saviard "saw a patient in the Hôtel Dieu, who had a horn instead of a nail upon each great toe." Musæus, in his "Dissertatio de Unguibus Monstrosis," records a case of unnatural growth of the nails, in which those organs resembled talons, and were five inches in length; while similar horny growths were developed on the skin of other parts of the body.

DISCOLORATION OF THE NAILS is met with in some diseases of the skin affecting the matrix of the nails, as in eczema and alphos; and it also results from injury, as in ecchymosis beneath the nail, the consequence of a bruise, *ecchymoma unguis.* Not unfrequently the nail is speckled with small roundish white spots, *selene unguis,* figuratively named by the ancient writers, *flores unguium;* and, by the moderns, less elegantly termed *mendacia,* or lies. These spots are more common in the nails of children than adults, and result from some slight injury done to the matrix of the nail during the progress of growth.

ABNORMAL TEXTURE of the nail may present itself in the threefold form of increased thickness, altered density, and altered smoothness, constituting the state of disease known as *degeneratio unguium.* Or the matrix of the nail may be the subject of inflammation, suppuration, and ulceration, constituting *onychia.* We may now proceed to the consideration of these two forms of disease.

DEGENERATIO UNGUIUM.

Syn. *Defœdatio unguium; scabrities unguium.*

The nails sometimes acquire an excessive degree of *thickness,* and the increase of bulk is accompanied with a yellow and dirty discoloration, the nail resembling horn, rather than its own natural texture, both in color and density. In this state it is not uncommon to find the nail separating from its matrix, and a dry, whitish, broken substance collected in large quantity beneath it. Two such cases are now before us, in which the greater part of the fingers of both hands are affected in this manner.

In another case, also under our observation at the present time, the nails are reduced to a mere film, and so soft and brittle in texture, that they split and break with the slightest pressure, *mollities unguium;* the texture of the nail is healthy, but its quantity deficient, and with the absence of quantity there is also, as a matter of course, an equal defect of firmness and tenacity. This state of the nails is a subject of much annoyance to the lady who is the sufferer from the affection; the ends of the nails are always ragged and broken, they catch in her clothes and in almost everything she touches; and when torn, they occasion bleeding and soreness of the matrix. Sometimes the nails are brittle from a morbid alteration of texture, being converted into a white earthy matter which breaks up into shapeless granules on the application of a slight degree of pressure.

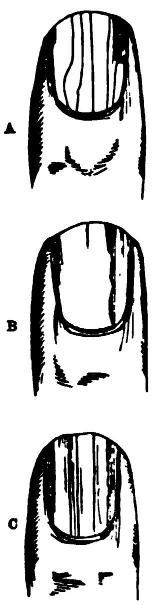
---

[1] Saillant, Mémoire sur la maladie de la femme dite aux ongles. Paris, 1776, 8vo.

Another change in the nails, for which we have been several times consulted, is a fibrous state of those organs, which appear to be made up of a thick stratum of fibres, closely packed together, but becoming loosened here and there, so that separate fibres are met with on the surface. The surface of the nail is necessarily rough, ragged, discolored, and marked by numerous dark, longitudinal lines; and, besides being very unsightly, adheres like a burr to any rough material with which it comes in contact.

Another variety of degenerated nail has the appearance of being *eroded*, or worm-eaten, *tinea unguium*, and sprinkled over more or less abundantly with hollow pits. The state of the nail, like the preceding, is unsightly, and the sufferer applies for relief, rather on account of the ugliness of appearance, than from any real inconvenience. Unhappily, medicine can afford very little aid in these cases.

Fig. M.



A. B. C. Forefinger, middle, and ring-finger, showing the broken and disfigured state of the nail, in degeneratio unguium; fissura unguium.

ONYCHIA.

ONYCHIA is an inflammation of the matrix of the nail, sometimes confined to that structure only, but more frequently involving the immediately surrounding soft parts. The inflammation is succeeded by suppuration and ulceration to a greater or less extent, the production of granulations of large size and unhealthy texture, of a fungous character, and an ichorous, sanious, and fetid discharge. The inflammation is sometimes superficial, sometimes extends to the deeper parts; sometimes terminates in the loss of the nail, or a part of the nail; and sometimes runs on to disease of the periosteum and bone. It is always a painful, and occasionally a troublesome and rebellious disease.

Onychia may be partial, that is, may attack a single nail only, or it may affect a greater number; it may also involve a part or the whole of the nail in destruction. It may occur along the edge of the nail, or at its root; and it may be either acute or chronic in respect of its progress.

It varies also according to the cause which shall have given rise to it; whether that cause be one of *external injury*, as a bruise, a splinter, a puncture, or a foreign body lodged beneath the nail. Whether it have been produced and kept up by the pressure of the side of the nail against the soft parts, giving rise to the *growing in* of the nail. Or whether its cause may be *internal* and constitutional, as that occasioned by eczema, scrofula, or syphilis.

In onychia resulting from external injury the treatment should be such as is applicable to a similar injury, when occurring in any other situation. If pus be formed beneath the nail, the nail should be thinned by scraping until reduced to a film, and then it should be punctured to allow the escape of the matter; the same manœuvre is applicable to the relief of the inflamed matrix when swollen by congestion; or to the removal of a foreign body lodged beneath the nail.

Onychia from in-growing nail originates frequently, and indeed generally, in interference with the growth of the nail in length by contact with the boot or shoe. Prevented from growing forward, the nail is apt to spread laterally, and the skin pressed forcibly against it, becomes inflamed; the inflammation increases from day to day; or, after much walking the skin becomes red, swollen, and painful, adding still further to the pressure; then suppuration takes place next ulceration, the production of fungous granulations and an unhealthy discharge. The medical management of this case consists in the withdrawal of the cause by rest and position; then the removal of the offending border of the nail; and the general relief of the inflammation by scraping the whole surface of the nail, until it becomes thin and pliable, and capable of yielding to the swelling of the inflamed parts.

Eczematous onychia is usually accompanied with eruption on other parts of the fingers and hands, and frequently on several regions of the body. It does not call for special treatment, but usually gets well when the general eczema is relieved.

Scrofulous onychia commonly attacks the nail follicle, and the inflammation spreads to the whole of the skin immediately bordering the nail; by degrees the entire end of the finger is inflamed and enlarged, and the nail looks as if it were sunk in a deep hollow, surrounded by a tumid border of a deep red or purplish hue. The finger has the appearance which is commonly denominated *clubbed* and, as the disease advances, and fungous granulations spring up from the ulcerated surface, the nail is sometimes completely concealed from view.

Syphilitic onychia has already been considered in the chapter on syphilitic eruptions; like scrofulous onychia it may attack the follicle of the nail, and is not confined to the lateral border, as in the case of in-growing nail. It is always accompanied by other signs of syphilis and frequently with syphilitic eruption in different regions of the body.

Onychia maligna is a name assigned to a peculiarly obstinate and severe form of the disease, apparently of idiopathic origin. It begins in the follicle of the nail, and is attended with excessive pain, and the secretion of an offensive discharge. Malignant onychia sometimes extends so deeply as to affect the periosteum and bone; and is often many months under treatment.

Onychia is not unfrequently accompanied with irritative fever, the onsequence of severe pain and loss of sleep, and the constitutional isorder tends materially to the aggravation of the local disease.

The *diagnosis* of onychia is self-evident, the only disease with which t can possibly be confounded being *panaris*, or common whitlow. Whitlow, however, begins in the skin at the end of the finger, or in he vicinity of the nail, and does not attack the matrix; it is simply a phlegmon in this situation; but when of large size, or, in its commencement, attacking the skin close to the border of the nail, the pus ot unfrequently extends beneath the latter.

The *causes* of onychia are, direct violence or injury, continued irritation from in-growing nail, and the constitutional and specific affections, eczema, scrofula, and syphilis. The cause of onychia maligna must be referred to some general derangement of the constitution, robably mal-assimilation and cachexia.

TREATMENT.—In degeneratio unguium, we have derived advantage rom the local application of iodide of potassium and chloride of zinc n solution.

The treatment of onychia must be local and constitutional; local o subdue the congestion of the inflamed part, to relieve the pressure, o give early exit to pus, and to stimulate to a healthy healing process; and constitutional, to remove internal causes of irritation, and naintain and support the powers of the system against the morbid nfluence of the local disease.

The general principles of local treatment are, position, maintenance f an uniform temperature, and exclusion of air by a dressing of basilicon ointment. If foreign bodies are present, they must be removed n the first instance; and if the evil be kept up by the nail, either in onsequence of its thickness and density or of its pressure upon the nflamed part, the nail must be scraped, and the offending parts gently ut away. It must be remembered that by scraping, the nail may be educed to the thinness and softness of cuticle, and that in this way ne of the chief difficulties in the treatment of onychia, and one of the hief causes of its virulence, may be swept away. We may thin the ail so as to reach the bed of the pus, and liberate the matter with ase; and the same operation practised along the middle line permits f the folding of the nail, and at once relieves the pressure of the edges n the lateral walls. It is useful in some instances to introduce a iece of dry lint between the tumid lateral wall of the matrix and the order of the nail. Exuberant granulations must be kept down by he application of a strong solution of nitrate of silver or sulphate of opper, and the part must be dressed with a desiccative or mildly timulative ointment, such as the benzoated ointment of oxide of zinc, he unguentum resinæ flavæ, or an ointment of Peruvian balsam.

The *constitutional* treatment of onychia must be regulated according to the indications presented by the general system. If the evil n the constitution be the eczematous or strumous diathesis, if it be yphilitic or cachectic, the treatment must be adapted to those states f the organism. Under all circumstances, digestion and secretion should be regulated, and we should keep up the powers of the system by nutritious diet and by tonic medicines, to enable it to resist the attack of disease, and to furnish the means of restoration of the disorganized parts to a healthy status. The remedies the most likely to be needed are, quinine and iron, iodide of iron, the mineral acids with vegetable bitters, and cod-liver oil.

CHAPTER XXIII.

AFFECTIONS OF THE HAIR SYSTEM.

THE hair system is composed of two parts, the *hair* itself, and the *follicle* in which the hair is implanted; and the diseases of these organs are represented by their aberration from the normal standard of structure and function. In the case of the hair, the aberration may be one of *quantity*, *length*, *color*, *direction*, and *texture;* and in the case of the follicles, there may be *excess*, or *diminution*, or *alteration* of secretion, or an organic change of structure.

The disorders of the hair having reference to quantity and color are, hirsuties, hairiness, or excess of hair; alopecia, or deficiency of hair; trichonosis decolor, or discoloration of hair; and canities, or whiteness of hair. The disorders of texture, remarkable especially for brittleness of structure, are fragilitas crinium, and trichonosis tonsurans or ringworm. And the disorders of the follicles are, simple alteration of secretion, and an organic change in the structure of the follicle constituting favus, kērion or scalled head, and sycosis.

In a tabular scheme the diseases of the hair system may be arranged under four heads, as follows:—

1. *Diseases of quantity.*

Hirsuties,
Alopecia vulgaris,
Alopecia areata,
" calva, vel calvities.

2. *Diseases of color and direction.*

Trichonosis decolor,
Canities,
Trichiasis.

3. *Diseases of texture.*

Fragilitas crinium,
Trichonosis tonsurans,
Plica polonica.

4. *Diseases of follicles.*

Morbi sebacei,
Favus,
Kērion,
Sycosis.

DISEASES OF QUANTITY.

HIRSUTIES.

Syn. *Trichosis hirsuties*, Mason Good ; *trichoma ; die Haarigkeit.*

Great variety is met with among individuals in relation to quantity of hair; in some persons the hairs are collected into groups of three, and in many situations two issue from the aperture of the same follicle; while in others the hairs are distributed singly at regular distances, and are not clustered.

In the present age, when custom and convenience call for the frequent shortening of the hair, we can form very little notion of differences involved in rapidity of growth. There can be no doubt that in some persons the growth of hair is more active than in others, but to what extent this difference may be carried is unknown. Judging from female hair, which is permitted to grow to its full length, as well as from hair on other parts of the body, we may rightly infer, that hair left to itself grows to a certain length, and then falls off, to be replaced by a fresh growth. Withof estimates that the hair of the beard grows one line (French) in the course of a week, let us call it one line and a half (English); this would amount to six inches and a half yearly; and if we suppose, with Withof, that the hair continues to grow at this rate for fifty years, the old man of seventy must have retrenched his beard upwards of twenty-seven feet in length. Berthold states the growth of the hair in persons between the ages of sixteen and twenty-four to be nearly two lines a week, or seven lines a month, and from six to eight inches a year. He found it grow more rapidly after cutting; during the day than at night; and in warm than in cold weather.[1] Men with long hair are frequently met with at our country fairs; and Rayer quotes the following instance of remarkable development of this production: "I once saw a Piedmontese, aged twenty-eight, strongly built, having the chest broad and large, and the muscles of an athlete; the arm was above twenty-one inches, and the calf of the leg nearly two feet in circumference. This man had little beard, and the trunk was very scantily furnished with hair, but his scalp was covered with the most extraordinary crop, frizzled on purpose, it was above four feet ten inches in circumference; the hair was of a dark brown, approaching to black, extremely fine and silky."

It is interesting to remark, that increase in length of the hair is sometimes associated with disease; and in truth we know little of the effects produced upon the system by the habit of removal of the hair. We have known persons who always experience headache after having the hair cut; and many cases are on record in which the removal of the hair is supposed to have given rise to remarkable results. Moreau has published some excellent observations[2] on the advantages and dangers of cutting the hair; and he especially details the case of a young lady cured of mania by that operation. The hair is often found of unusual length in phthisis, and long black eyelashes are considered pathognomonic of strumous disease. This is an interesting observation in relation to phthisis, inasmuch as it serves to illustrate, in another point of view, the vicarious activity which the skin assumes in disordered function of the lungs.

---

[1] Müller's Archiv., 1850.

[2] Journal Général de Médecine, vol. iv. p. 280.

When it is recollected that every part of the skin, with the exception of the palm of the hands and sole of the feet, is organized for the production of hair, it will cease to be a matter of surprise that, under certain circumstances, hair should be found to grow to a remarkable length in unusual situations. The proximate cause of this increased growth is augmented nutrition of the hair bulbs, determined by local or constitutional conditions, the local conditions being, either special organization of the skin, or external irritation of that organ. In both, the skin presents a deeper tint than usual, from increased formation of pigment in the cells of the rete mucosum, and a greater thickness from hypertrophy of the hair-bulbs and follicles.

Local increase of length of hair, depending on special organization of the skin, is usually congenital, and is exemplified in the various forms of *pilous nævi* or *moles*. In nævi of this kind there is no hypertrophy of the capillary structure of the skin, as in vascular nævi, but simple augmentation of color, the consequence of increased activity; and augmentation of thickness, the natural result of enlargement of the hair-follicles and bulbs. Pilous nævi appear in various numbers, and in patches of different size, upon all parts of the body. They are slightly raised above the level of the surrounding skin, and are covered with hair of variable length.

Sometimes the disposition to the growth of hair is not confined to so limited a spot as a nævus, but exists over a surface of considerable extent. A few years since we saw a lad, about twelve years of age, of healthy aspect and constitution, who presented an unusual growth of long, harsh, and black hair upon the outer side of the arms, extending from the back of the hand to the shoulder. The integument upon which the hair grew was of a brownish color, and contrasted with the lighter-colored skin of the rest of his arm, and of the body generally. The contrast was less striking near the circumference of the hairy growth, from the brownish tint terminating imperceptibly in the ordinary color of the cutaneous surface. The skin, in other respects, was uniform with the rest of the integument; neither raised nor tumefied, nor did it differ in temperature from the neighboring parts. The hairs in this case were about three-quarters of an inch in length, darker in color than the hair of the head, conical, and only differing from eyelashes in being longer and finer. Examined with a lens, the hair might be seen extending deeply, in an oblique direction, into the integument. They were furnished with a bulb, and were identical in appearance with the hairs of the head, or of the whisker.

Schenkius and Ambrose Paré record instances in which the body was completely covered with hair; while Bichât, in his treatise on General Anatomy, remarks, that hairs are occasionally developed on the surface of mucous membranes, as in the bladder, stomach, and intestines; he also discovered them on the surface of renal calculi. In the gall-bladder he once found about a dozen hairs, evidently implanted by the roots in the tissue of the mucous membrane. Villermé states, that hairs have been found on the tongue, pharynx, in the rectum, uterus, and vagina, growing from the mucous membrane.

Local increase of length of hair, depending on external irritation of the skin, is illustrated in the following cases: In a little girl recovering from an attack of fever a considerable growth of hair took place on the side of a blister which had been applied to the nape of the neck. The hair in this case increased to the length of half an inch, but evinced no disposition to grow longer; it was nearly as dark in color as that of the head, was harsh, but smooth, and thickly planted in the skin. Rayer records a parallel case; and Boyer was wont, in his lectures, to speak of a man who suffered from an inflamed tumor in the thigh, which subsequently became covered with numerous long hairs. Rayer mentions another case, occurring in a medical student, who had several hairy patches on the skin, induced, apparently, by frequent bathing in the summer season, and exposure to the scorching rays of the sun.

Augmented growth of hair in abnormal situations, arising from *constitutional* conditions, is illustrated in numerous instances which have from time to time been recorded. In some of these the unusual growth appears to have resulted from general disorder of the system; in others it was the consequence of a particular modification of the economy. Of the former kind is the case of a young lady, narrated by Ollivier;[1] she was remarkable for the whiteness of her skin, and for a fine head of jet-black hair; while recovering her strength after a chronic gastro-enteritis, she perceived one day that the entire surface of her skin, both of the trunk and extremities, was raised into small pimples, resembling those produced by cold, and commonly called *goose-skin*. At the end of a few days the pimples presented a small black head, and shortly after they were found surmounted by a short hair, which grew rapidly; so that at the end of a month every part of the body, with the exception of her face, the palm of the hands, and sole of the feet, was covered with a short hairy coat. The individual hairs reached the length of an inch, and were closely planted.

Hair is sometimes developed to a considerable length on the upper lip and chin of women at different periods of age. It occurs most frequently in those possessed of a naturally strong growth of hair and dark complexion. In young women it is frequently associated with disturbed menstrual function. This fact is observed by Hippocrates; but we have seen several instances in which no such disturbance existed, where the vital functions were well performed, and where the subjects were remarkable for robust health. The development of hair upon the upper lip and upon the chin is more common in unmarried females of a certain age, in whom, from inaction, the ovaries have become atrophied; it is also observed in sterile married women. In both these cases other changes, evincing the deprivation of the peculiar characteristics of the sex, are observed, such as dwindling of the mammæ, absorption of the subcutaneous adipose tissue, harshness of voice, masculinity of deportment and of action. A similar condition is remarked in women who have ceased to menstruate, either from natural or pathological causes. John Hunter, alluding to the circumstance of female birds, after having ceased to breed, assuming the plumage and other attributes of the male, says, "We find something similar taking place even in the human species, for that increase of hair observable on the faces of many women in advanced life is an approach towards the beard, which is one of the most distinguishing secondary properties of man." "The female, at a much later time of life, when the powers of propagation cease, loses many of her peculiar properties, and may be said, except from mere structure of parts, to be of no sex, even receding from the original character of the animal, and approaching in appearance towards the male, or perhaps more properly towards the hermaphrodite."

---

[1] Dictionnaire de Médecine, article Poil.

The physician is appealed to for the relief of hirsuties chiefly in the case of women, and the common seat of the excess of hairiness is the upper lip, the chin, the maxillary and submaxillary region, the chest, the arms, and sometimes the entire body. The age of the patients may range from childhood to twenty-five or thirty, and sometimes to a later period; and the causes which will be found the most common in the production of this state are, nervous and nutritive debility. In seven cases now before us, nervous debility, anxiety, and affliction, are the remote predisposing cause in four; deferred and arrested menstruation in two; and defective nutrition of the skin in the remaining one, a girl of ten years of age, in whom the skin is dry, discolored, brown, and unperspiring. In one of the cases, menstruation was protracted until the age of sixteen, the place of that function being taken seemingly by one of abnormal hair-formation; but when the menstrual function was fully established, the hair ceased to grow, and gradually fell off, until it entirely disappeared.

It is remarkable, and worthy of note, that some cases of alopecia are preceded by a superabundance of hair, and the inference is suggested that the skin may become exhausted by excessive function. We throw out the idea for the reader's reflection.

THE TREATMENT of hirsuties must be directed to the removal of the remote predisposing cause and of the debility engendered by that cause. After the general functions of the body have been regulated, we have derived advantage from small doses (two or three minims) of Fowler's solution, the local use of the juniper tar soap, and active ablutions with cold water. Depilatories should be discountenanced as much as possible, and especially plucking out the exuberant hairs with tweezers, as remedies calculated to injure the skin, to increase the evil, and frequently to add to the existing deformity a papular eruption induced by irritation of the hair-follicles. The use of the razor in aggravated cases is more rational, and sometimes necessary.

We have occasion to note a variety of irrational attempts to remove the growing hair, such as the use of nitrate of silver, nitric acid, caustic potash, &c., but the most remarkable that we have met with was, in the first instance, singing the chin, and that failing, piercing the follicle with a red-hot needle; the needle having been heated in the candle and coated with carbon, left a permanent black spot at the seat of the puncture, like that produced by tattooing, and the hair continued to grow.

ALOPECIA VULGARIS.

Syn. *Athrix simplex*, Mason Good; *trichorrhœa; xerasia; de fluvium capillorum; die Dunhaarigkeit*, Germ.

Alopecia, derived from αλωπηξ, a fox, because foxes were often seen to be more or less divested of hair when suffering under the mange, is used at present as the generic designation for thinning of the hair and baldness, and offers three varieties: namely, simple thinning of the hair, or alopecia vulgaris; total loss of the hair of limited extent, alopecia areata, or simply, areæ; and total loss of the hair of the scalp, and sometimes of the entire body, the result of disease, and not of old age, alopecia calva, or calvities. The latter form of calvities may be further distinguished as calvities juvenis, in contradistinction to the baldness of old age, calvities senilis.

Trichorrhœa, or defluvium capillorum, the simple and progressive fall of the hair, giving rise to thinness, is an affection of the general surface of the scalp, but more conspicuous at the partings, and more obvious in woman than in man from the manner of wearing the hair. Defluvium capillorum, in a small degree, is a common physiological phenomenon occurring once in the year, generally in the autumn season, and corresponding with the change of coat in quadrupeds, and the moult of birds, but is less observable in man than among animals. At other times it is occasional and accidental, being dependent on some change in the functions of health of the individual, and most complete and serious where the general health has undergone deterioration. The change is often rapid; in the course of few weeks an abundant head of hair may be transformed into a thin and scanty thatch, barely sufficient to hide the white skin from which it grows. If the scalp be carefully examined in these cases it will be found to present various morbid characters; sometimes the skin is dry, scurfy, and hot, and exhales an unpleasant odor; sometimes it is polished, and has the aspect of being relaxed, the pores being large and dilated; and at other times there may be extensive concretions of desiccated sebaceous substance. The hair also exhibits a variety of appearances, of which the chief is a dry and parched look, and a degree of roughness, resulting from the admixture of hair of every length; this roughness and unevenness being partly the result of the broken state of the hair, and partly of irregular reproduction, some of the young hairs being moderately thick, but the greater part fine and silky with very little hold on the skin.

In defluvium capillorum the hair is sometimes combed out in prodigous quantities, and if the roots be examined they will be found thinner than the shaft, showing the effects of exhausted nutrition, and, not unfrequently, the root is embraced by a small mass of hardened ebaceous substance. The exhaustion of the follicle continues for a long time after the fall of the hair, making no effort to reproduce it, and when at last the effort is made, the resulting hair is either too thin to maintain its position, or is twisted and crinkled, giving rise to the expression *withered hair;* or it is thick, harsh, and stumpy, its powers of growth being expended in bulk instead of length.

Females are more liable to alopecia than are males; their susceptibilities are greater, and they are more open to the influence of disturbing causes. In one hundred cases, sixty-three were females, and thirty-seven males; but this great difference is not the consequence of constitution alone, being partly referable to the greater importance of a healthy head of hair to females than to males, and to the greater care which is usually given by them to personal appearance. The age at which alopecia is most frequent is between twenty and thirty; in the one hundred cases already referred to, sixty-three were of this age; while between fourteen and twenty years the number was twenty. Of the same number, namely, one hundred, eighteen cases had existed at the time of application for treatment, between five and ten years; seven, between ten and twenty years; while two had lasted twenty-two and twenty-six years respectively.

ALOPECIA AREATA.

Syn. *Porrigo decalvans; alopecia circumscripta; area,* Celsus; *area diffluens; area serpens; tyria; ophiasis.*

ALOPECIA AREATA, OR AREA, is a total loss of the hair in a circumscribed and circular patch, and sometimes in the form of an elongated band, which has been compared to the trail of a serpent; hence the term *ophiasis.* The fall of the hair in area takes place suddenly, generally unobserved by the patient; and the first intimation he receives of its existence is the sudden discovery of a bald spot. The denuded portion of the scalp is remarkable in appearance; it is white and polished, evidently less vascular than the surrounding skin, less sensitive, thinner, depressed towards the centre, and entirely divested of hair. The case is not one of simple shedding of the hair, as in alopecia vulgaris; it is in reality arrested formation of hair; the formative function has ceased, and hair is no longer produced, nor is it capable of production until a more healthy condition of the skin be restored, until it recover its normal vascularity and sensibility, and with those conditions, its healthy nutrition. Pathologically, we must regard area as a suspended innervation, as a kind of paresis of innervation; and the other features of the disease follow upon this exhausted state of the nerves of the part; circulation is weakened, nutrition is suspended, and the function of hair production and secretion is at an end.

In area we are impressed with the conviction that the morbid phenomena must begin with a nerve, that the disease is, in fact, a neurosis, and that the more obvious and appreciable signs of the disease are simply its symptoms. In further support of this view, we have the fact of area being more frequently unilateral than bilateral; and where it assumes the ribbon form, it commonly follows the course of the nerve. But area is not limited to the scalp; it is met with also in the beard, the whiskers, and the eyebrows, and occasionally also on the body and limbs.

The patch or disk of area is commonly single; more frequently, however, there are two, sometimes three or four, and occasionally as many as twenty on the scalp. Their ordinary size is half an inch to one inch in diameter; sometimes, however, they form a patch of larger dimensions and irregular figure, especially on the occiput; occasionally two or three disks are linked together, and form a continuous band, as in the case of ophiasis; and sometimes the morbid action, beginning with a few isolated disks, is quickly propagated to the entire scalp, constituting calvities; and even to the entire body.

Area is more common in the female than in the male sex, but occurs at all periods of life, from the age of two years to sixty, the range of greatest frequency being from five to forty years. As may be inferred from its pathological nature, it is always slow in its progress, lasting several months, and more frequently years. Of eighty cases, nine had lasted between five and ten years at the time of application for treatment, five had resisted treatment between ten and fifteen years, and two had been in existence between fifteen and twenty years. In reference to cause, fifty-seven of this number were dependent on nutritive debility, eleven on nervous debility, nine on assimilative debility, while three owed their origin to local debility. The remote predisposing causes in these cases, arranged in their order of frequency, were as follows: scarlatina, rubeola, whooping-cough, organic disease, anxiety, fatigue, affliction, pregnancy and parturition, rapid growth, anæmia, neuralgia and nervous shock, deficient food, climate and seasons, congenital weakness, deranged menstruation, fever, and eczematous diathesis. The local injuries that had resulted in area were: accidental avulsion of the hair, stinging by bees, and a bruised wound.

Area commonly exists independently of any other form of disorder of the skin, but is occasionally combined with other affections; for example, with alopecia vulgaris, pityriasis capitis, eczema, canities, trichonosis tonsurans, and alphos. We have also seen it associated with melasma oculi.

The return of hair upon the bald patches of area is always slow, but sometimes more rapid than could be supposed from a view of the nature of the disease. Nevertheless, the restoration of the hair is greatly influenced by the predisposing cause; after pregnancy the hair has reappeared in from one to three months, this may be regarded as a case of accidental lowered vitality; but when the constitutional powers of the patient are exhausted, a longer time will be required. It is also worthy of remark, that, on its reproduction, the hair is usually white or fair, like that of an infant; but as it obtains increased power of growth, the natural tint of the adult is gradually restored.

Celsus gives us the following account of area: "There are two kinds of this affection; the common characters of both being atrophy of the superficial portion of the skin and loss of hair. If the diseased skin be made to bleed, the blood is watery and fetid; and the affection spreads, sometimes quickly, and sometimes slowly. The worst form is that which condenses the skin, destroys the fat, and renders the surface totally smooth. That which is called alopecia, spreads irregularly and without assuming any particular form. It occurs both on the scalp and in the beard. That form, which, from its resemblance to a serpent's trail, is named ophiasis, begins at the occiput, never exceeds the breadth of two fingers, and creeps onwards by two heads towards the ears, sometimes to the forehead, where the two heads unite over the middle of the forehead. The first of these forms may occur at any period of life; the latter commonly shows itself in children; the former scarcely ever gets well without treatment; the latter not unfrequently undergoes spontaneous cure."

ALOPECIA CALVA.

Syn. *Athrix calvities*, Mason Good; *calvities*.

ALOPECIA CALVA, or CALVITIES, requires to be distinguished by the addition of the word "juvenis," to avoid its confusion with calvities senilis, the natural consequence of old age. Calvities juvenis is a total absence of hair, not limited, as in area, to a few patches, but extending to the entire head, sometimes to the eyebrows, the eyelids, and face, as well as to the head, and sometimes to the entire body. The relation of this form of baldness to area is shown by the fact of its often beginning as area, and in some instances alternating with that form of the affection. One of our patients, aged twenty-four, had area in childhood; the hair returned to its normal state, but in a recent attack not a hair of the body has been spared; and another, now suffering from area, had an attack of calvities capitis ten years before.

Congenital baldness is sometimes, but very rarely, observed in newly-born infants, in whom, though well-formed and healthy with regard to every other function, the hair has been retarded in its appearance until the end of the first year, and sometimes as late as the second and third year. We have seen only a few instances of congenital absence of the hair of the head, but we have met with cases of deficiency in other regions more frequently, as upon the chin and pubes. "Congenital absence, and ulterior defective development of the hair," says Rayer, "are phenomena of considerable rarity, which I have, nevertheless, had opportunities of observing. Such was the case of the man Beauvais, who was a patient in the Hospital de la Charité, in 1827. The skin of this man's cranium appeared completely naked; although, on examining it narrowly, it was found to be beset with a quantity of very fine, white, and silky hair, similar to the down that covers the scalp of infants; here and there, upon the temples, there were a few black specks, occasioned by the stumps of several hairs which the patient had shaved off. The eyebrows were merely indicated by a few fine and very short hairs; the free edges of the eyelids were without cilia, but the bulb of each of these was indicated by a small whitish point; the beard was so thin and weak, that Beauvais only clipped it off every three weeks; a few straggling hairs were observed on the breast and pubic region, as in young people on the approach of puberty; there were scarcely any under the axillæ; they were rather more abundant on the inner part of the legs; the voice had the pitch and intonation of that of a full-grown and well-constituted man. Beauvais is not deficient in the virile indications of his sex; he has had syphilis twice. He tells us that his mother and both his sisters had fine heads of hair; whilst his father presented the same defect in the commodity of hair which he does himself."

In twelve cases of calvities juvenis, five affect the head alone, four the eyebrows, the eyelids, and the face, together with the head, and three the entire body. The ages of these patients range from five years to forty-one; five being under twenty, two between twenty and twenty-five, four between thirty and thirty-five, and the remaining case, forty-one. The sexes are evenly divided; and the duration of the disease ranges between four months and eleven years, in five the duration is under one year, and in three it exceeds five years.

The predisposing cause in eleven of the twelve cases is nutritive debility, that of the remaining case, nervous debility, the consequence of anxiety, and accompanied with melasma oculi. The remote predisposing causes are, congenital debility, scarlatina, rubeola, parturition and pregnancy, neuralgia, mental anxiety, and the climate of India.

The evidence of defective nutrition of the skin is more obvious in calvities juvenis than it is in area; the scalp is always pale, remarkable for its thinness, and somewhat insensible. The thinness of the scalp approaches often to a state of atrophy, the skin is more or less transparent, the venous plexus of the scalp is visible through it, and is nearer the surface than natural; and the sutures of the cranium may be traced with ease; moreover, a strong stimulant application produces less effect than it would upon a healthy head. Again, when the hair begins to appear, it is apt to be white at first, and upon attaining a fuller and hardier growth, to resume its natural color.

There is evidence also of the defective nutritive power being in some instances rooted deeper than the surface; in one case the cranium was imperfectly developed, and the child was feeble in intelligence. Other indications of degradation of nutrition were perceptible in a gentleman aged thirty-two, in whom there existed also scabrities unguium, while in another case the disease had been preceded by trichonosis tonsurans. The exhausting consequences of scarlatina and rubeola were shown in three of the cases, and that of intense neuralgia following scarlatina in one. The influence of the uterine sympathies on the organism is exhibited in one of the patients, aged forty-one, who was attacked with area and calvities toti corporis at thirty-three, after her first parturition, and again during her second pregnancy, the hair having returned in the mean time.

CALVITIES SENILIS, the natural consequence of age, is a change taking place gradually in the follicles, by which the formative structure, from exhausted nutrition, becomes atrophied, and the follicles obliterated. The change is usually preceded by dryness and loss of color of the hair. But baldness of this kind is not necessarily con-brushing it with a hard hair-brush until redness is produced, and then applying some stimulating application, rubbed briskly into the scalp for the space of five minutes. In women whose long hair contra-indicates the use of the cold bath, stimulating applications with plentiful brushing must be relied on. From two to four drachms of the unguentum stimulans,[1] combined with an ounce and a half of sweet-scented pomatum, form an elegant and useful compound for procuring the proper amount of stimulation of the scalp in alopecia. We may also avail ourselves of the stimulating properties of certain soaps, as of that of juniper-tar, petroleum, sulphur, and especially of carbolic acid.

In addition to the trichogeneous pomatum, it is sometimes convenient to be in possession of an agreeable stimulating lotion for the hair. The wash may be used either alone or alternately with the pomatum. The best trichogenous wash, according to our experience, is the ammoniated spirit lotion, of which the composition will be found among the "selected formulæ."

Various stimulating substances have been suggested and used from time to time, in the treatment of alopecia with advantageous results; such as mustard, horse-radish, walnut-leaves, the pomades of Dupuytren and Gibert. The pomatum ascribed to Dupuytren appears to us to be too clumsy a compound to owe its origin to so elevated a source; this remedy, with the trichogenous ointment recommended by Gibert, will be found among the "selected formulæ."

Avicenna advocates the use of leeches, slight scarification or acupuncture in the first instance, followed by rubefacients. The latter were in high favor among the ancients, who have left a goodly list of them in their writings; the following are some of the principal: oils of chamomile, wormwood, bay, laurel, and dill; hellebore, euphorbia, pomegranate, nasturtium, stavesacre, fœnugreek, rosemary, sage, Peruvian balsam, tar, frankincense, mastich, myrrh, and ladanum. Ladanum is warmly praised by Dioscorides and Galen, and occupies a place in most of the local applications for baldness.

It would not, however, in all cases, be judicious to limit the treatment of baldness to external remedies. Where disturbance of the secretive and digestive functions is present, these require attention. Where the energies of the nervous system are obviously reduced below their natural level, steel medicines and tonics may be used with advantage.

Our practice in area, after regulating the secretions, and, if necessary, administering ordinary digestive tonics, is to prescribe our ferro-arsenical mixture internally; and the use locally of some moderately stimulating pomatum, liniment, or lotion such as, the diluted pomatum stimulans, chloroform pomade or liniment, ammoniacal liniment, acetum cantharidis, or the compound tincture of iodine. With these remedies the cure is simply a question of time, the result cannot be otherwise than successful. "Some physicians," writes Celsus, "stimulate the area by punctures with the lancet; some rub in caustics, and some employ turpentine. But there is no remedy better than daily shaving with a razor; for, as soon as the superficial pellicle of the skin is removed, the roots of the hairs are opened. Frequently the mere rubbing in of writing ink after shaving is all that is necessary." But he fails to inform us that the writing ink of his day was simply composed of vegetable carbon and mucilage, like the Indian ink of the present time.

---

[1] *Vide* "selected formulæ" at the end of the volume.

When the hair begins to grow after baldness, it is at first of a light color, dry, soft, and almost downy, like the young hair of a newly-born child; but, by degrees, under favorable circumstances it resumes the color and strength of the surrounding hair. At other times this colorless hair remains during life, and forms a remarkable contrast with the dark hair of the rest of the head. The restoration of the hair to its primitive strength is said to be favored by shaving the scalp, the object of the operation being to confine the nutritive fluids to the formative structure, until the latter shall have regained sufficient power to produce hair of a proper degree of size and strength. Many authors concur in the advantage of shaving as a means of strengthening the hair. Fallopius upon this subject observes, "Il y a quarante ans que nous portons la barbe longue, en signe de notre déshonneur et de notre servitude; avant cette epoque nous nous rasions et nos poils ne tombaient pas. Les Espagnols en envahissant l'Italie, y ont introduit la tyrannie, la verole, et l'usage de la barbe longue."

DISEASES OF COLOR OF THE HAIR.

Alteration of the color of the hair arises from disorder of the chromatogenous function of the formative organ, and is very commonly associated with a similar alteration of the rete mucosum of the skin. It is by no means rare to find a lock of hair different in color, *trichonosis decolor*, from that which surrounds it. Less frequently, sudden alterations of color have been observed, while blanching of the hair or canities, *trichonosis cana*, is the natural effect of the torpor of function which accompanies advancing age.

TRICHONOSIS DECOLOR.—Two instances of reproduction of hair of different color to the original, after recovery from severe illness, are recorded by Alibert; in one of these, a head of bright red hair replaced one of dark brown, and in the other, hair of a deep black color took the place of brown. In the case of baldness from hypercatharsis, mentioned in a preceding page, the hair, originally of a brown color, was reproduced fair; and gray hair has been known to fall off in advanced age, and a new crop, similar in color to that possessed in youth, to be substituted.

Isoard, in a paper entitled, "Observation relative à une famille dont chaque individu presente plusieurs anomalies remarquables," in the "Journal Complementaire du Dictionnaire des Sciences Médicales," amongst other extraordinary physiological and pathological anomalies observed in the members of this family, remarks, that one of the daughters, seventeen years of age, and deaf and dumb from birth, each time that she is attacked by a fever peculiar to her constitution, undergoes a change in the color of her hair, from a pleasing blond to a dusky red, but that as soon as the febrile symptoms diminish, the natural color is restored. In the second volume of the "Memoirs of the French Academy of Sciences," is a narrative of a case in which the hair of a female was changed from brown to fair during her confinement, which otherwise presented no remarkable feature. M. Villermé[1] relates the case of a young lady, thirteen years of age, who, never having suffered from any more serious illness than slight pains in the head, perceived, during the winter of 1817–18, her hair fall off in several situations, until, at the end of six months, there was not a single hair remaining. In January, 1819, the scalp began to show a new growth, of a black-colored wool, in the situations first affected, and of brown hair over the rest of the head. The wool and the brown hair became white, and partly fell off after they had reached the length of three or four inches, while the rest changed their tint at a certain distance from the point, and became chestnut-colored, for the rest of their extent towards the root. The hair had a singular appearance, half white and half chestnut. The specimens sent to the society were mingled with a number of short hairs entirely chestnut-colored. In remarking on the preceding case, M. Villermé observes, that he has more than once seen the hair, particularly in phthisical patients, after having become white and fallen off, succeeded by a crop of new hair of a darker color even than the original hair of the patient. The late Dr. Chaumenton presented this phenomenon in a marked degree.

Dr. Bruley, of Fontainebleau, communicated to the Society of Medicine in Paris, in the year 1798, the history of a woman, sixty-six years of age, named Castellane, whose hair, naturally white and transparent as glass, became jet-black four days before her death. She died of phthisis. Some of this hair was transmitted to the society, and was seen to be quite black, with a few white hairs interspersed. On examination after death, Dr. Bruley found the bulbs of the black hair of large size, and gorged with dark pigment. The roots of the white hairs were dried up, and two-thirds smaller in size than those of the black hair. In his comments on this case, Dr. Bruley observes: "It is certain that disease may give rise to a change in a short period, that, according to Haller, requires a long period to accomplish naturally."

TRICHONOSIS VERSICOLOR.—But the most remarkable variation of color that has ever fallen under our notice is one which presents an alternation of black, or rather dark brown and white, from one end to the other of the shaft, and affecting every hair of the head, a particolored hair. The terms "banded" hair, "ringed" hair, rise to the mind as we survey it with a lens, whilst its general effect may be expressed by the term "speckled." It is an example of a kind of hair not infrequent in the animal kingdom, as in the ichneumon, and, in a magnified form, in the quills of the porcupine; but we have never before heard or read of such a condition occurring in man. Our specimen is taken from the head of a boy seven years and a half old,

---

[1] Journal Générale de Médecine, vol. lxix. p. 213

›od health, and active. The change in the hair has been observed bout two years, and is latterly on the increase. The length of white and brown segments is pretty uniform, about $\frac{1}{84}$th of an , but the dark are, in general, nearly double the length of the e. Sometimes the transition from brown to white is abrupt; times the segments are elliptical, sometimes conical; not unfre- tly the pigmented segment begins abruptly, and terminates in a ded cone; and occasionally the segments are white and brown itudinally. These variations relate only to the pigment, as the ıder of the hairs is uniform like ordinary hair; although, from manner of distribution of the pigment, some look varicose and spiral.

his peculiar structure of hair must necessarily result from peri- ity of function of the hair-pulp; one while producing pigment, her while ceasing to produce it; sometimes producing it actively, sometimes languidly. But the cause of these alternations it may ifficult to determine, and we can scarcely do more than attribute to a law of periodicity like that which governs sleep, or hun- or menstruation. It is known that the hair grows more slowly ng sleep than during the waking hours; and, it may be, that not is the energy of hair formation suspended for a while, but also of pigmentation; or, it may be, that the presence or absence of nentation may be attributable to other kinds of functional peri- ity.

ur treatment of a case of this kind must turn upon our capability nfluencing the periodicity of the function of hair formation; and is periodicity be a consequence of diminished vital power or tone, nay, by invigorating the vitality of the skin, increase the pigment- lucing function, and make permanent that which, in the absence ower, is only intermittent.

TRICHONOSIS CANA, VEL CANITIES.

n. *Trichosis poliosis*, Mason Good; *der Graukopf*, Germ.; *Blanching of the hair.*

nder the term trichonosis cana, or canities, we propose to consider teness of the hair, whether its production be congenital, or depend- on age, disease, or other causes. Dr. Copland regards the term pplicable only to whiteness resulting from an abnormal cause; e he defines it, "hairs prematurely gray, hoary, or white." ities presents two varieties in *degree;* in the one the hair is snowy," n opaque white, and corresponds in thickness with ordinary hair; he other it is clear and transparent, the "silvery hair" of age, ming a yellowish tint on desiccation by the atmosphere, and not equently finer than ordinary hair. These two kinds of hair offer rkable chemical differences; the former containing an abundance lcareous salts, and the latter a much smaller quantity, or even .

nities may be of three kinds: congenital, accidental, or senile; ay also be, in either of the three groups, partial or general.

ONGENITAL CANITIES of the hair is usually partial; we have seen two examples in young children where the phenomenon presented itself in the form of round patches; both were of the snow-white kind; in one the patch was situated on the side of the head; in the other it occupied one side of the forehead. The skin upon which the hair grew was remarkable for its whiteness, and contrasted strongly with the neighboring integument. Bartholin saw an infant, the whole of whose hair on one side of the head was brilliantly white, while the opposite side was equally remarkable for its jetty blackness. Ridlinus and others have seen the entire head of young persons uniformly white, although different in appearance from that of old age, and approaching very slightly the tint of fair hair. We have before alluded to the whiteness of the hair of Albinoes, both of the European and African race. Rayer, in the Atlas accompanying his work on diseases of the skin, gives a delineation, copied from a picture in the museum of the Jardin du Roi, of a young negro, upon the middle of whose forehead, and rising from the root of the nose so as to include a moderately large patch of hair of the front of the head, is a broad tract of skin wholly deprived of pigment; the hair is perfectly white and the white band on the forehead rendered more striking, by presenting a roundish islet of deep black near its middle. On the same plate is a figure, representing the head of an Albino negress, copied from Buffon; the skin of the face and the wool upon the head are entirely and completely white. Schenkius details the case of a young man whose beard grew white from its first appearance.

ACCIDENTAL CANITIES and SENILE CANITIES present varieties in *extent:* sometimes the whiteness is partial, being intermingled with the ordinary hair over the entire head, and producing, according to its proportion, the relative shades of gray. At other times it is local and confined to one or several spots, constituting so many distinct patches; or it may be general, and involve the entire head of hair. It commences generally upon the temples, and then cespreads gradually over the rest of the head. Blanching of the hair occurs first upon the scalp; it proceeds, in the next place, to that of the face, and subsequently attacks the pilous covering of other parts of the body. When white hair falls off it is not reproduced, but the scalp beneath remains bald. In Europe canities would appear to be equally common in the male and in the female, but attacks the latter at a later period of life, unless induced by other causes than age. "In China," says Mr. Lay, "the women turn gray sooner than the men; the former are often bald, the latter seldom."

Blanching of the hair sometimes commences at the root, and the colored part is gradually carried onwards, further and further from the integument. The kinds of hair most liable to the invasion of whiteness are those of a dark color, as black and brown; fair and auburn hair rarely become gray, but are more liable to fall off.

We have at present under our care a little girl, not yet six years of age, in whom there is an abundance of white hair mingled with that of her natural color, brown; and there are besides many of those short, bent, and horny white hairs, which are common in advanced age. She is pale, thin, and excitable; and has a superadded cause of nervous exhaustion in a large clitoris. At her birth she posessed an abundance of black hair, which, although retaining its quantity, has gradually altered to a rich brown; her eyebrows and eyelashes are still black. About twelve months since she received a shock to her nervous system from an accident; and some weeks afterwards her hair was found to have changed to white in parts of the head. It began in three circular patches, and has gradually increased until the head has the appearance of that of an elderly person. There is besides some tenderness of the scalp, and a furfuraceous desquamation. The change of color of the hair in this little girl is evidently a neuropathic phenomenon.

CAUSES.—Congenital canities depends upon some constitutional peculiarity inherit in the organization of the individual. Accidental canities is the consequence of diminished power of the cutaneous nervous system, as evinced, either by alteration of the pigment deposited in the formative cells of the hair, or by the entire absence of the coloring principle.

Morbid canities is more common in the female than in the male; of eleven cases of which the register is now before us, nine are female and two male. The ages range between fifteen and forty, three being under fifteen, and three under thirty. Three only are associated with other derangements of the hair, namely, alopecia; two having alopecia of the head, and one alopecia of the beard.

The governing cause of the morbid condition of the hair is nutritive debility in seven cases, assimilative debility in three, and nervous debility in the remaining one; the remote predisposing causes being as follows; over-rapid growth of the body, headache, cold climate, parturition, and deranged menstruation.

The remote causes which have been observed to give rise to accidental canities are, mental emotion, physical suffering and privation, constitutional affections, disease, and injuries. Of mental emotion, as of grief, anxiety, fear, terror, anger, acting as exciting causes of blanching of the hair, there are numerous recorded instances. In some of these cases the effects were gradual, in others immediate, producing the silvery tints of age in the course of a few hours.

"The different passions of the mind," says Bichat, "have a remarkable influence over the internal structure of the hair; often, in a short period, grief effects changes in its color, blanching the hair probably by means of absorption of the fluids contained in its tissue. Many authors have recorded similar facts. Some, and Haller among the rest, have doubted the truth of these assertions, but I know at least five or six examples, in which the loss of color was completed in less than eight days. In a single night, a person of my acquaintance became almost entirely blanched on receiving some distressing news."

The hair of Marie Antoinette, the wife of Louis XVI., is said to have become gray in a short period, from grief. The same statement is recorded with regard to Mary Queen of Scots. It is affirmed that Sir Thomas More became gray during the night preceding his execution. Borellus asserts that two gentlemen, one a native Languedoc, the other a Spaniard, were so violently affected, the first by the announcement of his condemnation to death, the latter by the bare thought of having incurred a serious punishment, that both became blanched in the course of a single night. Borellus adds, with regard to the latter gentleman, that his hair regained its natural color on being set at liberty. Schenkius and Boyle relate similar instances, but without the subsequent restoration. Hermeman also records an instance of sudden loss of color of the hair.

Cassan, in a paper in the "Archives Générales de Médecine," before referred to, records the example of a woman, thirty-three years of age, who, on being summoned before the Chamber of Peers to give evidence upon the trial of Louvel, underwent so powerful a revulsion, that in the course of one night the hair was completely blanched, and a furfuraceous eruption appeared all over the head, on her chest, and on her back. After the disappearance of the eruption, the hair still maintained its abnormal color.

Henry III., of Navarre, on hearing that the edict of Nemours was conceded, a condition favorable to the supporters of the league, was so exceedingly grieved, that in the course of a few hours a part of one of his mustachios whitened. In a person referred to by Rayer, several of the cilia became blanched, accompanied with white spots over the arms and forearms, in consequence of mental agitation.

Moreau[1] observes, "I once knew an aged man, for whom snow-white hair and a countenance deeply marked by the furrows of care, inspired the respect which we owe to age and misfortune." "My hair," said he, "was as thou seest it now long before the latter season of my life. More energetic in their effects than assiduous toil and lingering years, grief and despair at the loss of a wife most tenderly loved, whitened my locks in a single night. I was not thirty years of age. Judge, then, the force of my sufferings; I still bear them in frightful remembrance."

The poets make frequent reference to this remarkable and sudden effect of violent mental emotion:—

"O nox! quam longa es, quæ facis una senem!"

Byron, in the "Prisoner of Chillon," refers to the same phenomenon:—

"My hair is gray, but not with years,
Nor grew it white
In a single night,
As men's have grown from sudden fears."

We have met with several undoubted instances of blanching of the hair within the space of a few hours, and have recorded them in our treatise on Healthy Skin; and our researches into this subject, started in a sceptical spirit, and with doubt as to the possibility of such an occurrence, have resulted in a conviction that sudden blanching of the hair, although rare, is nevertheless an established fact.

After some diseases of the scalp, it sometimes happens that the newly-formed hair remains permanently white; the same change is occasionally observed upon cicatrices left by wounds.

---

[1] Journal Générale de Médecine, vol. iv. p. 260.

The principle of *treatment* of canities is to remove the causes of debility existing in the constitution by tonics, especially chalybeates and phosphoric acid, and, where defective nutritive power prevails, by means of the ferro-arsenical mixture, and to stimulate the scalp locally by abundant brushing, and by the use of some mildly stimulating lotion, such as the ammonia lotion advised in cases of alopecia.

DISEASES OF DIRECTION OF THE HAIR.

ABNORMAL DIRECTION of hair is termed *trichiasis;* and of this kind of disorder there exist two principal varieties, the one being due to morbid direction of the eyelashes, trichiasis ciliorum, the other to interlacement and clotting of the hair, the consequence of neglect.

TRICHIASIS CILIORUM is an irregularity in the growth and direction of the eyelashes. The cilia grow inwards towards the surface of the eyeball, and, rubbing against the conjunctiva, give rise to chronic inflammation of that membrane.

The *treatment* of this affection is the removal of the misdirected lashes by means of the ciliary forceps, and the prevention of their future growth by the application of nitrate of silver.

TRICHIASIS COACTA, or felting, is a derangement of the hair arising from neglect, and has no claim to consideration as a disease. It is a state of inextricable interlacement of the hair, and is sometimes met with in the course of protracted illness, and more particularly in women, whose long hair favors the disorder. Of a kin to this affection is the matting of the hair which takes place in plica polonica.

DISEASES OF TEXTURE OF THE HAIR.

Passing onward from diseases of quantity, color, and direction, to disorders of texture, we are reminded of the physiological qualities of the hair, the most remarkable of these qualities being toughness and elasticity. These properties are obviously due to the perfection of elaboration of the cell-tissue of which the hair is constructed; the soft mucous shells of the rete mucosum are, by virtue of the power of elaboration which belongs to cell life, converted into the horny tissue of the cuticle, and, at the same time, the analogous cells of the pulp of the hair are transformed into the still more horny, dense, and fibrous structure of the hair. But if we suppose a deficiency of vital power in these formative cells, the result must be imperfect elaboration, and the production of a tissue which is wanting in the properties that normally belong to it; that, in the case of the hair, it may be neither tough nor elastic, but, on the other hand, may be brittle and fragile. Such a morbid condition of the hair does, in fact, occur, and a state of *fragility* of the hair sometimes presents itself to our notice, and demands our attention.

FRAGILITAS CRINIUM is met with in two well-marked forms; one, in which the hair of the head, or of the beard, breaks upon the most moderate traction, as in the act of combing and brushing; and in which a certain amount of toughness remains, which resist plete rupture, but makes itself evident as a partial break or br the shaft of the hair. In the latter case an individual hair may a series of bruised spots, occurring at short intervals through entire length, and giving it a jointed appearance. On close ex tion the cuticle of the hair is found to be broken through, to with the exterior of the fibrous portion, leaving the central part fibrous portion intact; the broken ends of the fibrous structure out like the hairs of a brush, and, as remarked by Dr. Hermann who has also observed this condition of the hair, the broken larger than the rest of the diameter of the hair, and resembl outspread brushes meeting each other by their ends. Furthe these bruised and broken spots are generally white or grayish in and resemble particles of scurf dispersed among the hair. It unpleasant appearance that first attracts the attention of the p and induces him to seek counsel for its relief.

Like other defects of structure, fragilitas crinium originates in tive debility, and calls for the same method of treatment as that is applicable to canities. A physician, who lately consulted this state of hair, informed us that it began while he was pursui studies in Edinburgh; that he recovered during a short reside Australia, but that it reappeared on his return to Scotland.

TRICHONOSIS TONSURANS.

Syn. *Common ringworm; trichonosis furfuracea, tonsurans; tinea capitis, nu tondens*, Mahon; *porrigo scutulata*, Willan; *porrigo circinata*, Mason Good; *furfurans, tonsoria; squarra tondens; herpes tonsurans*, Cazenave; *pityriasis de* Gibert; *alopecia porriginosa*, Sauvages; *phyto-alopecia*, Gruby; *trichophyto rans; trichomyces tonsurans*, Malmsten.

TRICHONOSIS TONSURANS, OR TINEA, OR COMMON RINGWORM (XIV. XV.), is a disease of the hair, of the epidermal lining of th follicles, and of the adjacent interfollicular epidermis. The ha the epidermis are altered in structure; the hair is thin, shrivelle colored, faded, bent, and brittle, breaking off close to the sk though it had been eaten through by the grub of the clothes-m *tinea*, or, had been rudely shorn, hence the term *tonsurans*; a epidermis is dry, laminated, and furfuraceous, forming a thick u layer on the surface, and distending the follicles by its accumu

The disease presents some variety of appearance, having ref to distribution and degree. It commonly occurs in round p varying in size from half an inch to two inches or more in dia This is its *aggregated* form; at other times it is *dispersed* over the in small spots, each involving from two to ten or twelve hairs. varieties in degree are manifested by the force of the disease expended chiefly on the inter-follicular epidermis, the epidermal of the follicle, or the hairs. Other varieties result from its situati the scalp or on the body or limbs, and also from the prese flammation in various degrees, and giving rise to simple congestion r suppuration.

Trichonosis tonsurans or tinea capitis, is the common and typical orm of ordinary ringworm of the scalp; it occurs in the shape of round r oval-shaped patches, slightly raised, covered with a thick stratiform ayer of furfuraceous scales, sometimes papillated from the prominence of the follicles, and more or less denuded of hair, any hairs that remain in the patch being of a yellowish-gray color, dry, shrivelled, bent, and withered: sometimes several small bundles are matted together, and lie entangled with the furfuraceous base; but more frequently the hairs are broken off close to the surface of the patch. This is the porrigo scutulata of Willan, the term porrigo being synonymous with furfuraceous, and scutulata significant of the resemblance of the patch to a *scutum*, or shield.

When the disease is recent, the papillæ are very conspicuous; they are small and pyramidal, and resemble very closely the papillæ of cutis anserina thickly grouped together; they are, in fact, the mouths of the hair-follicles swollen and prominent from congestion, and have the appearance of being drawn up by the growth of the hair.[1] The papillæ are inclined obliquely in the direction of the hair, are somewhat imbricated, and from the summit of each there issue one or two hairs surrounded by a whitish film, formed by the accreted sebaceous and epithelial contents of the follicle. In older patches the papillæ are less evident.

The hairs in this disease have been compared, not unaptly, to "tow." They are remarkable for their bent and twisted shape, and resemble the fibres of hemp, in color, as well as in apparent texture; they are irregular in thickness, and are broken off at variable distances from the scalp, giving rise to the moth-eaten appearance from which common ringworm derives its synonym, *tinea*. In dark-haired children, the stumps of the broken hairs frequently present little black knobs at the mouths of the follicles; this is the first effort of a restorative process.

The crusts which form over the morbid patches when the disease is neglected, are composed of furfuraceous scales and diseased hairs, agglutinated together by the moisture which rises from the skin; they are grayish and yellowish in color, and when of large size, are apt to break up, in consequence of the movements of the integument, into several angular compartments, the line of rupture being remarkable for its white and silvery appearance. Moreover, on the surface of the crust, which is dry and harsh, the tow-like fibres of the diseased hairs may generally be perceived.

The scuta of trichonosis tonsurans commonly appear on the summit of the head; sometimes there is but a single patch, sometimes three or four; or there may be one or two large scuta, and many small ones scattered over the surface. Occasionally, in slighter attacks, the patches may all be of the smaller kind referred to under the head of trichonosis dispersa; while in a chronic case the disease may spread over the entire scalp, trichonosis diffusa, and leave no more than a fringe of hair around its circumference.

---

[1] MM. Mahon call the papillæ *asperities;* and compare the appearance of the morbid surface to the skin of a plucked fowl.

Trichonosis tonsurans may be complicated by inflammation of the diseased patch; and the inflammation may be erythematous, exudative, or pustular. Simple erythema may occasion thickening of the integument. The exudation, when it occurs, is muco-purulent, and agglutinates the furfuraceous scales and morbid hair into a mass; and the pustules, when they burst, produce a similar result. The disease is usually accompanied with itching, sometimes considerable; and with more or less enlargement and tenderness of the auricular, occipital, and cervical lymphatic glands.

TRICHONOSIS PITYRIASICA.—In the common, aggregated, or scutiform variety of trichonosis tonsurans, the surface of the skin, represented by the epidermis, and the follicle and hair, or the deeper portion of the skin, are equally affected, and the diagnosis of the case is very simple; but in milder cases the epidermis alone may be attacked, and the hair and follicles more or less completely escape; this constitutes a pityriasic form of trichonosis. The pityriasic patches may occur at the beginning or at the end of an attack of the ordinary disease; they may be present on parts of the scalp, in association with the scutulate form, or they may occur on one member of a family of children, while others of the same family are suffering from the ordinary form of the disease.

TRICHONOSIS ANNULATA.—When trichonosis attacks the body and limbs, it assumes a superficial and centrifugal character; it spreads by the circumference, while the erythema subsides in the centre, and thus forms a ring of varying dimensions, sometimes half an inch, and sometimes many inches in diameter. The border of the ring may be simply a raised erythematous ridge; more frequently it presents a row of papulæ, and sometimes a range of minute pustules. The trichonosis or tinea annulata may therefore be erythematosa, vel papulosa, vel pustulosa, while the central area remains more or less pityriasica.

The spreading character of trichonosis annulata is supposed to be due to the absence of the deep follicles and large hair-pulps of the scalp; and this, no doubt, is in some degree the fact; but instances are not rare in which the same centrifugal progression is seen upon the scalp, where the rings are more prominent than on the rest of the skin, and where they are frequently accompanied with a double and even a treble row of pustules.

In trichonosis annulata it is not uncommon to find the circumferential ring to have become the point of departure of a second ring, and the second ring of a third; while the area of the ring is commonly of a yellowish color, slightly furfuraceous, and sometimes papular. And occasionally, when several rings occur in the same region, their segments are apt to become intersected, and irregular forms arise, which have received the name of *trichonosis gyrata*.

Trichonosis annulata may be associated on the same person with trichonosis tonsurans, or it may exist where no other form of trichonosis is present. It is the form in which the disease is met with in adults who have associated with children affected with ringworm; and it frequently attacks one member of a family, while another may have the commoner trichonosis tonsurans. The rings of this disease are usually solitary; sometimes several are dispersed over different parts of the body; but they are never numerous.

The relative frequency of the three varieties of trichonosis, namely, tonsurans, annulata, and pityriasica, in seventy cases was: fifty, tonsurans; fifteen, annulata; and five, pityriasica. The proportion of males to females was forty-two to twenty-eight; the age of origin, two years to fourteen; and the period of duration as follows: under one month, nineteen; between one month and six months, thirty-four; between six months and one year, nine; and between one year and four years, eight. The annulate forms are found at the extremes of age, beyond the limits of the tonsurant variety; in one instance, at three months, in another at six months; and at the opposite extremity, at the ages of sixteen, nineteen, twenty-six, and forty-six. In two of the seventy cases the tonsurant and annulate forms were present together in the same person, while in one the annulate form had assumed the pustular character. There were also in these seventy cases three examples of complication with eczema and two with pityriasis.

PATHOLOGY.—The seat of disease in common ringworm is the hair, the epidermal lining of the hair follicles, and the interfollicular epidermis.

When examined with the microscope, the dry, discolored, and friable hairs of this disease are found to be more than twice their natural size, and a great change is perceptible in their structure. The average diameter of human hair is $\frac{1}{400}$ of an inch, while a number of hairs growing from the morbid patches of common ringworm measured between $\frac{1}{240}$ and $\frac{1}{180}$ of an inch.

A healthy hair is composed of three portions, a cortical portion or cuticle, which forms the surface; a fibrous portion, which constitutes the chief bulk of the hair; and a central medullary portion or pith. In the diseased hair, the cortical portion is little altered from its normal condition, but is apt, in consequence of the morbid state of the layer immediately beneath, to crack and peel off, and so produce a roughness of the shaft. The medullary portion is apparently unaffected; the chief pathological changes are found in the fibrous portion, and particularly in its external part.

The fibrous portion of the diseased hair appears, from the great difference of structure which it presents, to be composed of two layers, an outer layer of various thickness, made up of colorless nucleated granules, and occupying about one-third the diameter of the shaft; and an inner layer, which retains more or less of the normal fibrous structure.

The external layer of the fibrous portion of the diseased hair is entirely formed of transparent, globular, nucleated granules, closely packed together, and constituting a tessellated structure. The size of the granules is about $\frac{1}{8000}$ of an inch, and they are somewhat flattened from mutual pressure. The cohesion subsisting between the granules is slight, for when the cortical layer of the hair is torn and peeled off, some of the granules remain attached to it, and others are dislocated from their natural position.

The internal layer of the fibrous portion, at the same time that it retains its fibrous character, is evidently altered in texture; the fibres are thicker than natural, they are undulated in arrangement, and they appear to have entering into their construction, from point to point, one or two, and even long rows of nucleated granules. The undulated and swollen character of the fibres gives to the entire shaft an appearance of laxity and rottenness of texture, upon which the friability of the hair obviously depends. When a hair is broken across, the fibres give way at unequal lengths, and the ruptured ends look uneven and ragged.

The epidermal lining of the hair-follicles has the same granulated structure as the external layer of the fibrous portion of the hair.

In essential nature, the morbid alteration now described is a modification of the normal structure of the hair and epidermal lining of the hair-follicles. In a preceding page (40), we have shown that the hair-fibres which enter into the construction of the great bulk of the hair are composed of cells, and that these latter are made up of granules. Now, if from any cause the granules of the hair-cells should undergo enlargement or hypertrophy, the state of the hairs will be precisely that of common ringworm; and if the destruction of the natural tissue of the hair be considered, it may be described as a *granular degeneration* of the hair.

The mode in which these nucleated granules are formed appears to be identical with that of the production of the analogous granules of favus. On the dermal surface of the epidermal lining of the diseased follicles, we found corpuscles perfectly resembling favus-corpuscles, and we make no doubt that these corpuscles undergo the same changes of growth and development. There is, however, this difference between the two affectious, namely, that in common ringworm the cell-development ceases with the production of nucleated granules; whereas in favus, it is driven on another stage, namely, to the formation of cellated and plant like stems. It is surprising, under these circumstances, that favus is so rare in comparison with ringworm, and that the latter does not occasionally assume the characters of the former.

Gruby, who has made the granules of common ringworm the subject of examination, as well as the abnormal cell-tissue of favus, regards them in the light of vegetable formations, and places them in the same category as parasitic mucedinous plants, under the name of microsporon Audouini. The granules are, of course, sporules; but where the parent plant is that produces them, he fails to inform us. Malmsten, of Stockholm, seems to adopt the views of Gruby; he gives the disease a new name, trichophyton tonsurans, and illustrates his paper with an engraving of the appearance of one of the morbid hairs when seen with the microscope.

For ourselves, we are as little inclined to yield the point in this disease as in favus; on the contrary, the absence of the cellated shafts is an additional ground of argument against the vegetable theory. It is perfectly consistent with the pathology of abnormal nutrition, that the hair-granules should become enlarged and increase in number by proliferation, and thus be the cause of the subsequent changes taking place in the hair. But the hypothesis of vegetable growth within the substance of the hair is to us impossible to comprehend.

DIAGNOSIS.—Trichonosis tonsurans is known by the alteration of appearance of the hair, by the bare places which are left on its breaking off near to the level of the skin, and by the furfuraceous, elevated, and sometimes papillated unevenness of the surface of the morbid patches. Trichonosis pityriasica is also recognized by the breaking of the hairs which grow upon the furfuraceous spots, by the small extent of the spots, their seat on the scalp, and their occurrence in association with cases of the tonsurant variety of the disease. Trichonosis annulata is also known by negative rather than by positive characters, its solitary development, and its association with ringworm in other members of the family or community in which it occurs.

CAUSE.—Trichonosis is a disease of nutritive debility, and is essentially an arrest of development of the hair-cells and cells of the rete mucosum. The cells retain their primitive molecular or granular character; and the granules, taking on a proliferous growth, are converted into a tissue closely resembling that of a mucedinous vegetation. The state of the hair and of the epidermis composed of this phytiform tissue may be expressed by the term "granular or phytiform degeneration;" and their composition explains the brittleness of the hair, and the loose and furfuraceous condition of the epidermis.

Looking to the predisposing causes of the disease, we find them arranged in the following order: measles and scarlatina, deficient diet, anæmia, weakly parentage, fever, change of climate, and, in the instance of an adult, anxiety and affliction.

But there are not wanting those who see in the phytiform tissue already noticed a true plant of the mucedinous type, composed of branches and sporules or seeds, and termed trichophyton tonsurans, and who believe the cause of the disease to be the sporules of the plant, which, alighting on the skin, perforate its horny layer, and reaching the more succulent rete mucosum, vegetate and grow at the expense of its juices, sending up branches through the pulp into the shaft of the hair, and destroying the normal tissue of the hair for its own proper nutrition. The trichophyton, in this view of its nature and habits, is a parasitic plant, originating extraneously to man, conveyed to him by seeds, and pursuing an independent existence at the expense of his tissues, producing in its turn seeds in vast numbers, and becoming, by means of these seeds, the source of further contagion. It is not denied that there may be constitutional causes favoring the growth and development of the plant; indeed, causes of this nature are necessary to prepare a morbid soil for a morbid growth. We may simply say that the parasitic theory does not commend itself to our belief, and the facts admit, in our opinion, of another and more scientific explanation.

PROGNOSIS.—There is nothing grave as touching the life of the individual in trichonosis tonsurans; but the disease is obstinate, as diseases of constitutional debility commonly are, and its evils are increased by an unnecessary amount of alarm with regard to its contagious nature. We do not wholly deny the contagion of ringworm, but we doubt it seriously, and the more so, as all the phenomena which are usually taken to be evidence of contagion admit of an explanation equally favorable to the opposite theory. The public are impatient with regard to ringworm, and are apt to magnify the vexations attending it more than they deserve. It certainly may run through an entire family, but it never attacks adults in its most severe or tonsurant form; and in reference to duration, that may be stated as being generally under twelve months.

TREATMENT.—The management of trichonosis tonsurans calls for a generous diet and generous regimen, with the aid of tonic medicines, and a local treatment of the tonic or stimulant kind. Well-fed and well-tended children, even when of delicate parentage, never suffer from ringworm, and a nutritious diet cures it without the assistance of medicine. It commonly occurs in schools, where children are generally underfed, but sometimes under the eye of parents, whose knowledge of the proper feeding of children is not equal to their wisdom in other respects.

The tonics which we principally have recourse to are the nitromuriatic acid with tincture of orange-peel, the phosphoric acid with tincture of the perchloride of iron and tincture of orange-peel, or, as a remedy enjoying the double quality of an assimilative tonic and a cutaneous tonic, the ferro-arsenical mixture.

The local treatment consists in ablutions with the carbolic acid or juniper-tar soap, plentiful brushing and combing, painting with the tinctura picis cum sapone, or inunction with the unguentum picis liquidæ, vel juniperi, or with the nitric oxide of mercury ointment, diluted in the proportion of one to three parts. The morbid action in the skin, and the inflammation which sometimes accompanies it, are of the low type, and require stimulating treatment: hence all the stimulating applications in the pharmacopœia are useful when employed with moderation, from the most refined formulæ of the mercurial remedies down to the old woman's ferrugino-astringent atramentum. Some practitioners prefer a solution of bichloride of mercury; some the acetum cantharidis, or simple acetic acid; some the compound tincture of iodine, the two latter especially for trichonosis annulata; and some an iodine ointment.

The sectaries of the parasitic theory, using the same remedies, call them parasiticides, and believe that they effect a cure by immolating the parasitic vegetation; and the medical parasiticides of France go the length of pulling out every individual hair from the diseased skin, and after clearing a small space, saturating it with the bichloride of mercury solution. They find this process more speedy and certain, not to say painful, than the application of simple stimulant remedies; but they forget that, in tearing the hair from its pulp, they are merely employing a stimulant remedy of a very effectual kind, and one which has been found most useful in other diseases of the hair follicles, besides trichonosis.

TRICHONOSIS PLICA.

Plica Polonica, or Polish ringworm.

LICA POLONICA, so far as we are able to judge from the description he disease given by authors, is, in essential nature, analogous to common ringworm of this country. There exists in it, as well as ingworm, an enlargement of the diseased hairs, a condition proba- depending on the larger size of the nucleated granules; and the er are the depositories of the morbid fluids, which are found in h quantities in that affection. In other words, plica is a state of *nular degeneration* of the hair, the granules being turgid with a cous sanguineous fluid. The state of matting of the hair, which is ught to be peculiar to plica, has its analogue also in ringworm; l the conical bundles of which we have spoken, when describing latter, are the representatives of the greater and more complete iculation of the Polish disease.

According to the best authors on plica polonica, the scalp is inflamed l excessively tender; the hairs are swollen and imperfectly formed; y are tinged with a reddish colored and viscous fluid, and the hair- licles secrete an abundance of this fluid, which agglutinates the rs, and then by desiccation unites them into a solid mass. The derness of the scalp in these cases is so excessive, that the bare ch of a single hair excites pain, and, when cut across, the reddish d with which the hairs are surcharged, oozes from the divided remity. This appearance, together with their extreme sensibility, given rise to the supposition of the hairs being sarcofied, and per- led with vessels and nerves. The odor arising from a scalp so cted is described as being exceedingly disgusting; excoriations of siderable extent are frequently formed, and the matted hair becomes resort of swarms of pediculi.

lica is not confined to the scalp, but affects the hair of every re- n of the body; the nails of the fingers and toes are also changed, oming rough, fibrous, and discolored. Left to itself, the disease s for ten or twelve months; the symptoms then subside gradually; hair returns to its natural diameter; and the filthy mass is pushed degrees further and further from the surface, until it falls off ntaneously, or is cut away by scissors.

he hair presents some modifications, in the manner of its matting, ich bear relation to its length. Thus, in males, who wear the hair rt, numerous locks are matted separately, constituting the variety wn as *plica multiformis;* at other times, the matted hair forms a le coil, *plica caudiformis;* or, again, it may constitute a large and gular mass without order in its matting, the usual character of the ease in woman.

Several authors have asserted, that, in the majority of cases the lp is not affected in plica, and that the alteration in the hair occurs certain distance from the integument. This assertion is incredi- , and it seems more reasonable to conclude, that in the cases luced in support of this statement, the disease was advancing towards cure, and consequently that the morbid mass of hair was removed by growth from the surface of the scalp. A recent writer on this subject, Bidder,[1] makes the following remarks: "During the past summer I remained for several weeks in a country where plica polonica is frequent. The disease occurred only in a mild form. In all the cases which I examined, about twenty in number, I found the hair, for a distance varying from half an inch to one inch from the scalp, perfectly natural; one would have believed that the disease had been removed from the head by the growth of the hair. The scalp was perfectly normal, being neither reddened, swollen, nor increased in sensibility, so that disease of the hair would appear to be capable of existing independently of disorder of the scalp in which the matrix is imbedded.

"I had also an opportunity of observing the process of separation of the diseased from the sound hair. Two individuals presented themselves in whom the morbid mass had fallen by spontaneous separation, a rare occurrence. Once alive to the possibility of such a process, I soon discovered in two cases, a groove, as though made by a ligature, around the cylinder of the hair, and forming a perfect line of demarcation between the healthy and diseased portion. In some hairs, the groove resembled a mere crack; in others, it had proceeded so far that the separation was nearly effected. In other cases I was unable to discover the line of demarcation."

CAUSES.—Supposing our opinion to be correct with regard to the nature of plica polonica, its causes will probably be found to be analogous to those of ringworm. The disorder is most prevalent on the banks of rivers and in the marshy districts of Poland, in which it appears to be endemic. It is met with, as is ringworm, among the noble[2] and wealthy, as well as in the poor; and, unlike ringworm, it occurs in adults as well as in children.

TREATMENT.—The treatment which is applicable to ringworm we should conceive to be suitable also to plica. Change of air, improved diet, and altered hygenic conditions, must be indubitably necessary, and the same tonic alterative medicines, particularly the ferro-arsenical remedies. A prejudice seems to prevail in Poland against the removal of the mass by mechanical means, which we are inclined to think unreasonable. It would be necessary to subdue local inflammation in the first instance, and afterwards apply moderately strong stimulating local remedies.

DISEASES OF THE HAIR-FOLLICLES.

The hair-follicles and hairs are so intimately allied, that it is difficult to understand how disease can be present in one without at the same time involving the other. Practically, this difficulty is solved by the fact, that the follicles may be deranged in their function without any alteration being manifested in the structure of the hair. But the reverse of this proposition is not equally true; for in that greater morbid change, which is the cause of alteration in the structure of the hair, the follicles suffer to a greater or less extent. Hence, while the designation "diseases of the hair-follicles" must be regarded as applying solely to those organs, "diseases of the hairs" may be supposed to implicate in some degree the follicles also.

---

[1] Müller's Archiv., 1840.

[2] We once saw a mass of matted hair which had been cast from the head of a Polish lady of noble birth.

Diseases of the hair-follicles may either be simple derangement of function of the sebiparous glands of the follicles, such as stearrhœa, or excess of secretion, and narcosis folliculorum, or torpor of secretion; or they may be an organic change of structure of the epidermal lining of the follicle, constituting favus; a suppurative inflammation of the follicles of the scalp, called kērion; or a congestive and suppurative inflammation of the hair-follicles of the face, namely, sycosis. In a tabular form, they may be arranged as follows:—

Morbi sebacei,	Kērion,
Favus,	Sycosis.

STEARRHŒA VEL SEBORRHŒA.

Diseases of secretion of the sebiparous glands of the hair follicles, are sometimes preceded by chronic inflammation of the skin, and not unfrequently with dryness, itching, furfuraceous desquamation, and loss of hair; at other times, the first symptom of inconvenience results from accretion upon the cutaneous surface, and among the roots of the hair of sebaceous substance more or less generally distributed, and varying in density and thickness.

The erythematous form of the disorder is illustrated in the following example: A naval medical officer, while serving in the West Indies in 1833, suffered from an attack of erythematous patches on the crown of the head. They were attended with itching and furfuraceous desquamation, the itching being increased at night. In 1837, on his return to England, the disease presented occasional exacerbations, but never at any time disappeared entirely. In 1838, while on the Pacific coast of South America, frequently exposed to a tropical sun, and undergoing considerable fatigue with copious perspirations, the patches coalesced, and poured out "an unctuous exudation of a dark reddish color." At this time, also, the loosening and fall of the hair, which has continued until the present time, was first noticed. "Previously to my return to England in 1839," he observes, "large sebaceous incrustations covered the crown of the head in patches varying from the size of a sixpence to a shilling; the scales became thicker, attended with an exceedingly disagreeable feeling of heat and itching. They were in a state of continual decadence and renovation. I had my head shaved for two or three months, and while the hair remained short, I was effectually relieved from the disease."

As soon as the hair was allowed to grow, the disease returned, and in 1840, while stationed in the river Plata, he was again shaved, and continued the practice for four months. In 1841, whilst in China, he had recourse to shaving for the third time. "During our operations," he remarks, "in the Yeang-tse-keang, the heat was intense, the thermometer ranging from 90° to 95° in the shade. I think the disease, at this time, attained its greatest pitch of intensity, which I am induced to attribute to the impaired state of the digestive functions, as I was confined for months exclusively to the ship, and of course debarred all suitable exercise. The scales at this time assumed a gummy character, tenacious and soft; the itching was particularly annoying, but was somewhat relieved. I passed eighteen months on the East India station without any alteration in the character of the complaint."

"During my stay in England, in the winter of 1844–45, I tried preparations of the nitrate of silver, iodine, dilute hydrocyanic acid, and I persevered in the use of the tincture of iodine, applied locally, during the voyage to Van Dieman's Land last year, without any benefit; and during my return I used most assiduously the bichloride of mercury, which relieved the itching for a short time."

"I am unable to account for the commencement of the disease, nor was I, during its progress, sensible that climate produced any material alteration in its character. Heat and itching were the usual concomitants, and they were at times so annoying that I was obliged to apply soap and water frequently during the day, which always afforded me temporary relief. Stimulants always increased the itching.

"A deceased brother was similarly affected, but he never lost his hair, and I am the only one of my family who has felt its decadence, although many of my progenitors have lived to a very old age."

"Notwithstanding the different remedies resorted to, the disease assumed that inveterate form which you saw when I had first the pleasure of consulting you in February last. Since I have been under your treatment, the disease has gradually yielded to the means you have employed. The patches, after your second application, sunk to the level of the surrounding integument, the squamæ have not been reproduced to a hundredth part the extent that they were before, the few remaining patches have gradually lost their hardness and redness, and are now resuming the character of healthy integument. I feel that the hair has been in a slight degree reproduced."

Besides attacking the head, the erythematous form of stearrhœa is also met with on the forehead and eyebrows, and sometimes on the shoulders and back of the upper arms. Its characters are, a punctated redness with dryness of surface, and a roughness which is partly due to the prominence of the pores, as in cutis anserina, and partly to the follicles being filled, and, as it were, choked up with dry and harsh epithelial contents. When it attacks the eyebrows it causes the fall of the hair, and produces a papillated baldness, more particularly of the outer half of the eyebrow. The absence of the natural sebaceous secretion of the skin, and the production of a dry sordes in its place, exhibits a torpor of function which is at the root of this complaint.

In some instances the inflammation of the follicles is so slight as to escape attention altogether; and the disease does not come under the attention of the surgeon until the altered secretion has been poured out upon the skin, and forms a concretion of variable thickness and extent. The crust presents some variety in point of color. It is ften yellowish, and resembles the film which drying-oil leaves after lesiccation, and sometimes is grayish and greenish in its hue. Occasionally this state of the scalp is associated with dryness of the skin, nd then the hair is dusty and sordid; but, more frequently, there is no such appearance.

The symptoms by which the patient discovers the presence of disease are, itching, frequent, often intense, sometimes constant, and fall of the hair.

There is another state of the scalp, *narcosis folliculorum*, depending on chronic inflammation of the hair-follicles, which is far from being uncommon, particularly in women and children. In this disorder the scalp and hair are found covered with a yellowish and dirty-looking powder, composed of an admixture of granular particles and furfuraceous scales. Masses of this granular substance are collected at the mouths of the follicles, while others are threaded like beads upon the hairs. By brushing, the skin may be cleansed of this pulverulent substance, but the granular particles still remain threaded on the hairs, and adherent to them, at the mouths of the follicles. If a hair be withdrawn, its follicular portion will be seen to be inclosed in a small sheath of desiccated epithelium or sebaceous substance, which xtends almost to its bulb. Moreover, the root is slender and dry, nd the entire hair looks parched and starved.

The symptoms which denote the existence of this complaint to the ifferer are, the difficulty of cleansing the hair, a moderate degree of ching, and the fall of the hair, which comes off in large quantity. he fall of the hair is easily explained; the torpidity of action, hich occasions the production of a dry, sebaceous matter, and a y and pulverulent epithelium folliculi, extends its influence to e growing hair, which is deprived of its moisture and of its hold on the skin, and therefore falls with the slightest force. Another ange depending on the same cause is not unfrequently observed in is disease, namely, grayness of the hair.

When torpor of the follicles occurs upon the general surface of the dy, it interferes, more or less, with the growth of the hairs, and is rmed *morbus pilaris*. In this affection the hairs become imprisoned ithin the follicles by the formation, at the mouth of the latter, of a nall mass or film of hardened, sebaceous matter; and, as the hairs ntinue to grow, in spite of this impediment, they are gradually risted into a spiral coil (Plate VI. fig. 10), which may be seen at the outh of the follicles. A number of little pimply elevations are in is manner produced, each elevation corresponding with a coiled ir; and if the apex of the pimples be rubbed off, the twisted hair ill be at once exposed. This disorder is most frequently perceived n the legs and thighs. Turner remarks, that in children it is often et with on the back. It is attended with itching, and occasionally ith acute lancinating pains, comparable to the piercing of the skin ith a sharp needle.

The TREATMENT of these morbid conditions of the hair-follicles is, lution and friction with the carbolic acid or juniper-tar soap, and e subsequent inunction of a pomade consisting of one part of the nitric oxide of mercury ointment to two of elder-flower ointment or simple benzoated lard. To this may be added brushing and combing in abundance, with the view of setting up a more active circulation and innervation of the scalp.

FAVUS.

Syn. *Crusted or honeycomb ringworm; porrigo lupinosa*, Willan; *tinea lupinosa, favosa, maligna; teigne faveuse*, Alibert; *porrigophyta*, Gruby.

FAVUS is a disease of the epidermal lining of the follicles of the hair: it is characterized by the formation of yellow disks around the apertures of the follicles, encircling the hair, and increasing to the diameter of several lines. The disks are slightly raised, flat, or somewhat concave on the surface, and bordered by a prominent rim, so as to suggest the idea of a cup. The substance of the cup is formed in the rete mucosum, and is therefore covered by the horny layer of the epidermis: hence the smoothness of the face of the cup, the well-defined aperture in the centre perforated by one or two hairs, the elevated growing border or rim of the cup, and the decline of the surface beyond the edge of the cup to the level of the sound skin. Moreover, the integument adjoining the cup is red and congested, and the cuticle furfuraceous.

When favus occurs in isolated cups, scattered over the scalp, it is termed *favus dispersus*, or favus urceolaris; but when a number of adjoining follicles are affected, it is called *favus confertus*. Sometimes the cups of favus confertus constitute a round or oval patch of moderate dimensions, favus scutiformis, and occasionally the disease spreads over the whole head, to the margin of the scalp. The conformation of the cup is most appreciable in the isolated form of the disease; where a number of cups approximate by their edges, favus cohærens, they resemble somewhat a honeycomb, hence the term *favus;* and in a still more confluent form the boundary-lines are obliterated, and the raised and cupped borders are only distinguishable around the circumference of the mass.

Favus is most commonly met with on the scalp, but occasionally on other parts of the body; for example, the pubes, the limbs, and even beneath the nail. It may remain for some time in the state just described, but after a while the yellow matter of the disk desiccates, and constitutes a subcuticular crust; the crust breaks over its concave surface, and the pale-yellow desiccated substance of which it is composed is dispersed in small fragments among the hair, the central portion of the disk remaining threaded upon the hair by which it was originally perforated. These changes are necessarily accompanied with pruritus and irritation of the skin, and the irritation of the skin is commonly followed by a muco-purulent exudation and suppuration, so that, in an advanced stage of the complaint, the scalp may be covered with a heterogeneous mass of yellowish-gray fragments, broken crusts, scabs, moist discharges, matted hair, and excoriations, in the midst of which the indications of the primary disease may scarcely be discoverable, and require to be sought for in the circum-

and broken up into small irregular masses, like mud dried in the sun.

Under the microscope these three divisions of the crust, namely, its deep, middle, and superficial portions, present certain differences of structure. The *deep* portion is composed of globular corpuscles, measuring $\frac{1}{3000}$ to $\frac{1}{5000}$ of an inch in diameter, closely collected together, and forming the outward boundary of the crust. Each corpuscle is constructed of a cell-membrane inclosing numerous very minute secondary cells ($\frac{1}{10000}$ to $\frac{1}{6000}$); and the latter are formed of several minute transparent granules ($\frac{1}{30000}$ to $\frac{1}{15000}$). In the centre of each of the secondary cells is a dark point, which might be regarded as a nucleus, but which, in reality, is merely the shade caused by the approximation of the elementary granules of which it is made up.

The *middle portion* is composed of corpuscles much larger than the preceding, namely, between $\frac{1}{2500}$ and $\frac{1}{1500}$ of an inch in diameter, and consisting of a cell-membrane, containing from four to seven or eight nucleated granules; of nucleated granules ($\frac{1}{4500}$), separate and in groups; and of other nucleated granules connected together in a linear series, and assuming a branched and plant-like form.

The *superficial portion* is remarkable only for the large size of the nucleated granules, and for the more highly developed condition of the plant-like growth. In it there are no corpuscular cells.

In essential nature, we believe the peculiar matter of favus to be a modification of the elements of the epidermis; its earliest form is that of granules, possessing a simple, aggregated, and nucleated shape, and cells. The primitive granules measure from $\frac{1}{30000}$ to $\frac{1}{15000}$ of an inch in diameter; the nucleated granules measure $\frac{1}{4500}$; and the cells between $\frac{1}{3000}$ and $\frac{1}{5000}$.

In the early development of favus it is no uncommon thing to see around the aperture of a hair-follicle a circle of pus in place of favous matter. There is no difficulty in distinguishing between the two, for pus is much lighter colored than the matter of favus, and when the epidermis is punctured, issues from its cavity in the form of a drop. In a very short time, however, this little collection of pus loses its characteristic color; it becomes, as it were, dried up, is no longer recognizable as pus, and merges into the yellow crust of favus. Now, in this fact we have evidence that the same tissue may produce, one while, epidermal cells; another while, pus-cells; and thirdly, favus-cells. The fact of pus being so easily distinguishable from the matter of favus may, at first sight, appear to offer a contradiction to the analogy which we wish to establish, but the difference between the two is more apparent than real. Pus is fluid, from the presence of a large quantity of water, and this dilution with water necessarily alters the color and modifies the development of the corpuscles. Favous matter, at its softest, appears in the state of paste.

A drop of pus from the situation referred to was composed of globular corpuscles $\frac{1}{3000}$ of an inch in diameter floating in lymph. The corpuscles presented the ordinary granular appearance of pus; but when water was added, thev swelled to the size of $\frac{1}{2000}$ of an inch;

and, in place of the minutely granular structure which they previously had, displayed in their interior from four to seven or eight large granules or nuclei. We will not stop to inquire by what means this change was effected. Imbibition of water was evidently one of the phenomena, but what the process might have been by which the minute granules, or rather cells, which were previously seen, were dispersed, is a matter of no importance to the present investigation.

Now the corpuscles which form the deep layer of the crust of favus are composed of seven or eight granules, which represent the nuclei of the cell. The size of the granules varies between $\frac{1}{10000}$ and $\frac{1}{8000}$ of an inch, while that of the entire cell is $\frac{1}{3000}$. So that these cells correspond very accurately with the multi-nucleated pus-cells, the only difference between them being the distension of the cell-membrane of the pus-cells with water.

It is interesting to observe the development of these favus cells as they become displaced, by successive formations, from the surface of the basement membrane, and proceed onward towards the centre of the crust. The nuclear granules gradually enlarge until they attain the $\frac{1}{4500}$ of an inch, a size nearly approaching the bulk of the original cell; and the cell in which they are contained measures between $\frac{1}{2500}$ and $\frac{1}{1500}$ of an inch. At this period the function of the cell apparently ceases, for its membrane is broken and lost; many of the nuclei are dispersed, but many also remain adherent to each other, and may be observed in linear groups of two, three, and even four or five, already assuming a plant-like character.

In recapitulating the changes referred to in the preceding paragraphs, it would appear that the vital force inherent in a plastic fluid, is employed in the development of molecules of extreme minuteness, primitive granules; that these granules combine and co-operate for the formation of cells; and that the aim of the cells is the production of nuclei or secondary cells. We will now examine these secondary cells, and follow the subsequent changes which take place through their means.

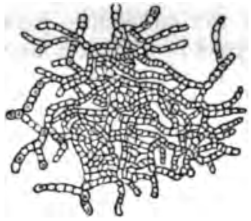
It is quite evident that these secondary cells are themselves nucleated. In some instances a single nucleus only is perceptible; in others, two; and in others again, three. When two nuclei are apparent, the secondary cell assumes an oval or oblong form; and when there are three it has a three-cornered shape. As soon as the cell has attained an elongated form a slight contraction is apparent around its middle, and a septum appears which divides it into two cells; in a short space of time each of these cells develops two nuclei, which separate by degrees, and are finally parted by a septum, as in the previous case; a third repetition of similar actions might convert the four into eight cells, and in this way an elongated stem is produced, which has all the appearance of a vegetable formation. When, in place of two, three nuclei are developed at the same time, the stem has a dichotomous character, and seems to have resulted from the growth of two branches from one stem; and the occurrence of a tri-nucleated cell in the course of growth of a stem is the usual mode of origin of a branch.

When the process of growth which is here described is accompanied by an active nutritive force on the part of the cells, the cellated stems maintain the original diameter of the cells from which they spring. But when the nutritive force is less active, or the growth is more energetic, then the stems dwindle in size in a corresponding ratio. This, we apprehend, is the signification of the considerable range of variety in breadth which these stems exhibit; the thicker ones measuring $\frac{1}{3000}$ to $\frac{1}{4500}$ of an inch, and the smaller $\frac{1}{12000}$. It certainly has no reference to trunks or branches, as the idea of a vegetable growth might suggest.

The thickest and largest cellated stems are found in the upper portion of the favous crust, the most slender in its deeper portion; while in the middle portion, stems of every intermediate size are found mingled with secondary cells in vast numbers. These, namely, the stems and secondary cells together with the primary cells and primitive granules, being the real constituents of the crust.

The stems offer some slight differences in relation to the contents of their cells; in some, and especially in the large ones, the contents are transparent and the nuclei manifest, while in the smaller stems they are finely granular.

Fig. N.



A portion of the yellow matter from the crust of favus, showing its plant-like structure.

The resemblance which the cellated stems of favus bear to some of the inferior vegetable organisms, and especially to the mucedines, has caused them to be considered as plants. They have been described as originating in the cortex of the crust and growing inwards towards the centre, as giving off numberless branches, and producing seeds or sporules in vast abundance; the so-called sporules being the secondary cells of the previous description. With all these plant-like characters, hypothesis speedily reached the conclusion that the sporules must be the means of disseminating the disease; in other words, were the elements of contagion. But mere resemblance to a vegetable formation is not sufficient to constitute a plant. The statement of the origin of the vegetable formations by roots implanted in the cortex of the crust is unfounded, the secondary cells bear no analogy to sporules or seeds, and it is somewhat unreasonable to assign to an organism so simple as a cell the production of seeds and reproduction thereby, when each cell is endowed with a separate life and separate power of reproduction.

Again, it has been assumed that the favous matter is contained in the hair-follicles, and consequently in communication with the exterior; a presumption which rendered the idea of a plant-like formation the more probable. But if, as we have shown, the favous matter is sub-epidermal, and has no communication with the exterior, it will be necessary to admit the production of a vegetable organism within the animal tissues, before such a phenomenon can be received as possible. The mucedinous formations which have been described hitherto as having been discovered in the animal body, have always been found n the surface of membranes, and not in the substance of tissues, as is he case with favus.

In chemical composition, the crusts of favus, according to the analysis of Thenard and Chevillot, consist in every hundred parts, of

Albumen, ...	70 parts.	Phosphate of lime, .	5 parts.
Gelatine, ...	17 "	Water and loss, . .	8 "

State of the hair in favus.—In a preceding paragraph we have stated that the hair remains standing in its follicle when a recent crust is removed, and we may add, that if the hair be drawn out, it will be found unaltered in appearance. It is only when the favous matter has increased to the extent of obliterating the follicle that the hair falls. If the obliteration of the follicle be complete, no new hair is formed, but if it be only partially destroyed, then a hair may be produced of smaller diameter than the original hair, or somewhat lighter in color. It is unreasonable to expect that so serious a disturbance of cell-formation, as that which occurs in favus, can exist in the scalp, without interfering in some degree with the structure of the hair, itself a product of cell-formation. Such an inference does take place, and the nature of the morbid alteration we shall endeavor to explain.

When a hair from the midst of a crust of favus is placed under the microscope, it is seen to be traversed in the direction of its length by a number of cylindrical tubes measuring in diameter $\frac{1}{10000}$ of an inch. Close examination shows that these tubes are divided by transverse septa into small spaces a very little longer than their breadth, and are filled with air. Now, an observer imbued with the vegetable theory of favus, would be likely to conclude that these were the stems of a mucedinous plant, and so indeed they have been considered. They have also been described as branching dichotomously, an assumption altogether unfounded in fact.

To understand the true nature of these tubes, it is necessary to go back to the structure of the hair. The middle or fibrous layer of the hair is composed of oval-shaped cells, closely packed together, and arranged in a linear order. These cells are identical in structure with the cells of the deep stratum of the epidermis, that is to say, they are composed of granules congregated around a central granule, which constitutes the nucleus of the cell. When examined with the microscope, it is not easy in all cases to discover the cells, but their component granules are always obvious, and from the plan of disposition of the cells and their oblong shape, the granules have a linear arrangement, and assume the appearance of fibres. The hair-fibres offer some variety of aspect according to the focus in which they are viewed. For example, with a superficial focus, the peripheral granules are alone seen, and the hair appears to be entirely composed of granules arranged in single rows. With a deeper focus, the rows of granules appear to be associated in pairs, each pair having between them an unconnected row of dark and apparently nuclear granules. In this view, the fibres resemble a chain composed of open links. While, with a still deeper focus, the centre of the cell, with its nucleus and granular periphery, is brought into view.

Now the hair-fibres here described, are composed of cells arranged in a linear series, and the cells are filled with a homogeneous albuminous substance, having a certain consistency, and possessing the characters of a solid. Under the influence of disease, the contents of the cells are so far modified as to be deposited in a fluid form, and the subsequent evaporation of the fluid, during the growth of the hair, leaves the fibres hollow and empty, and to all appearance tubular. This is the explanation of the hollow tubuli which are found in the structure of the hairs in favous disease; generally they are distributed in small numbers throughout the thickness of the hair, and produce no influence on its shaft; when more numerous they occasion the lightness of color of the hairs before mentioned, and their somewhat shrivelled appearance. But it is evident that they offer no analogy with the plant-like formation of the crusts of favus. When the hairs present the tubular structure to any great extent they become brittle, and are easily broken.

DIAGNOSIS.—In its fully-defined form favus is unlike every other cutaneous disease; the yellow cupped disks, with well-defined rounded borders, are pathognomonic; then the detrita resulting from the breaking up of the crusts, and afterwards the destruction of the hair, and resulting permanent cicatrices and bald areæ. We can hardly conceive the possibility of a neglected and incrusted eczema being mistaken for this disease; but in the hands of the inexperienced such an error might happen. It must be remarked that favus is extremely rare in England, and we have seen it only in the workhouse. In Scotland it is more common; but in our daily practice it has come to us from abroad, from France, Spain, and the northwestern coast of Africa. In three thousand cases of cutaneous disease occurring in private practice, we have met with favus only twice; one of the two cases being a native of Africa, the other a young lady aged eleven, who has suffered from the complaint since the age of three; she has resided on the French coast, and has undergone the purgatory of avulsion, almost to the destruction of her intellect, but without benefit, to the disease. On the summit of the head is a large oval patch of a dry, cream-colored substance, resembling dried mud, fissured with cracks, and broken up into small fragments; this substance looks as if it were imbedded in the scalp; all trace of the cup-like form is gone, even at the edges, and the concretion has a powerful mouse-like odor; the hair is gone from the actual seat of the patch, but over the rest of the head is unaffected, excepting in being more harsh and wiry than natural. At one time this patient had a patch of favus on the nose.

CAUSE.—The cause of favus is a debility allied with struma, a debility of nutritive vitality; and the remark has been handed down from author to author, that children afflicted with favus remain stunted in their growth, are slow in displaying the changes which take place at puberty, and are wanting in their intellect. "I have seen," says Biett, "individuals affected with this disease evince no signs of puberty at the age of twenty, and even more." Whereas, in our opinion, these phenomena of retarded development are not the effect, but only a part of the general deficiency of power, in other words, of the defective nutrition, which is the real cause of the disease; and the result of this form of debility is shown in the perversion of cell-structure from a horny animal tissue to an inferior grade of tissue, corresponding with that of vegetable life, a degradation of structure from the animal to the vegetable type, as we have previously named it, a granular and phytiform degeneration of the epidermal cell-tissue.

But, according to the phytopathologists, with whom we entirely disagree, favus is a parasitic vegetable growth, originating in the seeds of the achorion, coming from without, and germinating on the spot where they may chance to fall. In our theory we do not recognize contagion as a means of communicating the disease; with the phytopathologists, contagion is the very essence of their opinions.

The transmitted records of the older writers and modern authors both agree in according to favus a high degree of contagious power. The supporters of the vegetable theory of the disease are still more ardent in this belief; for, with a distinct mucedinous growth and a host of sporules, it would be hard indeed if the disease were not susceptible of propagation. This theory will also win admirers and disciples from the simple and truthlike explanation which its seems to offer of the manner of transmission. The seeds are conveyed directly to the soil in which they take root and grow; they are carried by combs, or brushes, or hands, or they are wafted by the winds. Gruby made the contagious property of favus the subject of experiment; he inoculated with the substance of the favus crust mammiferous animals, birds, reptiles, insects, and himself, but without success. He also inoculated vegetables with some matter, and, after seventy-six.trials, he found a mycodermis similar to that of favus produced on a cryptogamic plant.

We are exceedingly doubtful of all that has been recorded with regard to the contagiousness of favus. The experiments of Gruby prove nothing in its favor, for the instance to which he refers is merely one of the formation of a mucedinous plant, in other words, of a crop of mould, upon a wounded cryptogamic plant. The identity of this mucedo, with the "porrigophyte," or plant of favus, being far from being established.

The seat of development of favus affords a common-sense negative to the notion of propagation by seeds or sporules; and if it be true, as we have endeavored to prove that the plant-like production has nothing in common with plants but its form, a form which is as constant in animal structures as in plants, the vegetable theory of the disease must necessarily fall to the ground.

We will now adduce a different line of argument. In the course of our long connection with the St. Pancras Infirmary, we have never seen more than six cases of favus; in no one instance was there reason to suspect the disease to have originated in contagion, and certainly there was no example of its transmission to others. In a well-marked illustration of this disorder, the features of which we have preserved by delineation,[1] the patient, a boy, ten years of age, had suffered from favus for seven years. He was brought up with a brother and sister; and, on the last occasion of the outbreak of the disorder, was one of a school of one hundred and fifty-eight boys. He remained in the school until the disease was fairly developed over the greater part of his head, and was then transferred to the Infirmary, where he was accustomed to play with several invalid companions. Now, during the whole course of his association with other children, although he partook of their games without restraint, although he washed in the same water, and used the same towel and comb, the disease was never communicated to others; it never extended beyond himself.

Bateman, who was an ultra-contagionist, and gave the specific name "contagiosum" to a very harmless form of disease of the sebiparous glands, namely, the "small sebaceous tumors" of our classification, opens his history of diseases of the scalp by the observation that "the porrigo is a contagious disease." This sweeping declaration is immediately followed by an exception in favor of porrigo larvalis; to which might have been added, without any hesitation, porrigo favosa, and porrigo decalvans; so that, on the threshold of inquiry into the contagiousness of porrigo, one-half the species of that writer might have been declared at once to be free from imputation. The remaining three species, or, in reality, two, for porrigo furfurans and porrigo scutulata are stages of the same disease, are, therefore, the only affections about which any doubt can exist in the minds of persons conversant with cutaneous diseases.

The impression made on our mind by the perusal of the account of favus (porrigo lupinosa) which is given by Bateman, is, that he cannot have been familiar with the disease, and that his description is not drawn from nature, but composed from the writings of the older medical authors, who, in this instance, had certainly observed the disorder very imperfectly. The term "porrigo," he tells us, was adopted by Willan, "nearly in the same sense in which it was used by Celsus, who included the moist and ulcerating, as well as the dry and furfuraceous, eruption of the scalp under this denomination."[2] He further observes, that "numerous writers, ancient and modern, have designated the varieties of the disease (porrigo) by distinct names, such as crusta lactea, alopecia, pityriasis, favi, achores, scabies capitis, &c.; but the most intelligent observers have pointed out the identity of the nature and causes of those eruptions;" from which it may be inferred that the "ancient and modern writers" were greatly superior, in point of discrimination, to the "most intelligent observers;" for, of a surety, nothing can be more widely dissimilar or non-identical than some of the diseases represented by the six designations mentioned above. In the absence, therefore, of facts, and something in the shape of proof to the contrary, we must be permitted to doubt, not only the contagion of favus, but also the qualification of Bateman to speak to the subject. Further, it is worthy of remark, that in the plates of cutaneous diseases published by Willan and Bateman, there is not one which represents favus.

---

[1] Portraits of diseases of the skin, Plates XLII. XLIII., B, C.

[2] The following is the description of porrigo given by Celsus: "*Porrigo* is a disease in which small scales crop up among the hair, and are thrown off by the skin; sometimes they are accompanied with moisture, but more frequently they are dry; sometimes they are produced without, and sometimes with ulceration; sometimes with a disagreeable odor, and sometimes with none. The disease commonly occurs on the head; sometimes, but rarely, in the beard, and sometimes even in the eyebrow. It does not, however, arise without some disorder of the body, nor is it without advantage in its occurrence. For if the head be sound, the disorder does not happen; and if there be any disorder of the head, it is better that the superficies of the skin should suffer, than that the peccant matter should be thrown upon some inward part. It is better, therefore, to help the elimination by combing, than to attempt to check it. Nevertheless, if it prove very annoying, as where there is a discharge of fluid, and particularly if it give out a bad odor, then the head is to be frequently shaved, and mild astringents applied; and if stronger remedies are called for, it is to be borne in mind that they are not applicable in a recent stage of the affection." The porrigo of Celsus is therefore a chronic eczema, one while dry and squamous and another while moist.

Plumbe commences his treatise on porrigo by adverting to "its known infectious nature." He alludes to favus only as the crusted stage of common ringworm, and that so lightly that it is evident that he cannot have observed the disease with attention. On its contagious property he is obviously no authority.

It appears that favus, which is rare in this country, is common in France. "Next to eczema and impetigo," says Rayer, "favus is the most common of the chronic inflammations of the hairy scalp." Again, he observes, "favus is a contagious disease, and is readily communicated among children who make use of the same comb and brush, especially if any slight excoriation happen to exist on the scalp. He, furthermore, adduces the evidence of Willan, in proof of the contagious qualities of the disease, and concludes with the erroneous observation, that "the complaint is very common in England."

Biett records that favus is "evidently contagious, but in some cases the attempt to produce infection has entirely failed." Gibert observes, that the "contagiousness of favus is acknowledged by almost all pathologists;" he then unfortunately adduces the evidence of Bateman and, after making mention of some instances which prove too much, he finishes up with the following remark: "the contagiousness of favus is then an established fact." In fairness to him we quote his illustrations, however little weight they may have with ourselves. "In the wards of Biett, two or three instances have been of the propagation of this disease by the act of kissing, the disorder making its appearance in these cases around the mouth and on the chin. In a patient who wore a wig which had belonged to a person affected with favus, the latter disease broke out on the arms and legs. This curious circumstance was explained when it was ascertained that the wig always came off during the man's sleep, and was found in the bed in contact either with his arms or legs. Some years since Guersent had occasion to see, in a school, twelve children who were successively attacked with favus within the space of a few weeks or months, in consequence of the admission of a child affected with that disorder.

There is too much of a blind and unthinking deference to the statements of predecessors in all these examples. In some instances, we make no doubt, the case was not favus at all; and in others, communication by contact has been admitted with too little consideration. The breaking out of a disease in a number of children breathing the same air, partaking of the same food, and living under the same hygienic influence, is a circumstance of daily occurrence, and one totally distinct from contagion; and if, as we have shown, a free association continued for years between an affected individual and others has failed in transmitting the disease, the power of transmission may be reasonably doubted. It is encouraging to find an original thinker like Alibert refusing his assent to the current belief in the contagiousness of favus.

Finally, whether we regard favus in its origin, its development, or its essential nature, or whether we look at its phenomena in a social point of view, its rarity, and the indisposition to transmission which it evinces when closely observed; in each and every of these features of the disease we shall find reasonable grounds for doubting its propagation by contagion. Our own careful investigations of the subject have forced on our mind the conclusion that *favus is not contagious*.

Prognosis.—In the countries where favus commonly prevails the disease is remarkable for its obstinacy; in the climate of England, with good food and proper regimen, it speedily gets well. The injury done to the scalp, when the disease has been long in existence, is, however, irremediable; the cicatrices are permanent, and the hair never returns on the denuded spots.

Treatment.—The treatment of favus consists in improving the general health by nutritious diet and tonic regimen; by the use of ordinary tonics for general indications of debility; chalybeates in the case of anæmia; and the iodide of iron and cod-liver oil where struma is suspected or obvious.

Locally, the first step must be to remove the crust, and secondly, to soothe the local irritability and inflammation of the skin. Saturate the crusts with oil or lard, and cover the part for twenty-four hours with an oiled silk cap, and the crusts will be so far softened as to be raised without difficulty from its bed, and if the procedure be managed with adroitness, without lesion of the skin; if the crust do not separate easily, the inunction and covering may be repeated for another interval of twelve or twenty-four hours. When all the crust is disposed of, the head should be washed with the juniper-tar, petroleum, or carbonic acid soap, and, after drying, anointed with a diluted nitric oxide of mercury ointment. The washing should be repeated daily, as also the ointment; and with moderate care, any further formation of crust may be prevented, and the skin will return to its healthy state. When there is hair on the head, assiduous combing and brushing may be added to the washing and inunction.

KERION.

Syn. *Melikerion; inflammatio folliculorum capitis suppurans; achores; scalled head.*

Kerion is a suppurative inflammation of the hair follicles of the scalp, which results in the destruction of the hair pulp and fall of the hair. It is known by the occurrence of patches of a deep red or purplish color, more or less tumefied, sometimes nearly flat and sometimes prominent, and studded with yellow points corresponding with the apertures of the hair follicles, and containing a yellowish-white pus. The disease begins suddenly, the first indication of its existence being frequently the fall of the hair and the discovery of a bald, or scalled, and inflamed patch; hence the term *scalled head.* In a few days it is apt to swell up into a tumor of considerable elevation and extremely tender and painful; and the tumor gives issue, by numerous openings, to a muco-purulent, viscous, and honey-like[1] fluid. The description of this disease given by Celsus is remarkable for its accuracy; he compares it to a "furuncle in shape, but larger and more painful. When it maturates, it presents a number of foramina, through which exudes a glutinous and purulent humor." Celsus also describes this fluid as a "glutinous palish humor, of the consistence of honey, or resembling the juice of the mistletoe, or sometimes oil."[2]

Kērion presents two principal varieties, having reference to its distribution; namely, *kērion confertum*, and *kērion dispersum;* the former presenting scutiform patches, commonly of one or two inches in diameter, and often perfectly circular; the latter being small in size, and scattered over the head, comprising in their area only a small cluster of follicles. In other respects both varieties are alike and pursue the same course. In their exudative stage, the hair around the patches is apt to become agglutinated and matted over the disease, and, with the desiccated secretion, to form a crust of considerable thickness, under which the muco-purulent matter collects in considerable quantity. Inflammatory congestion is at the same time propagated to the adjoining skin; there is pruritus and pain; the lymphatic glands of the scalp become enlarged and tender, and abscesses are produced in their neighborhood.

The tumor of kērion at this period communicates a hollow sensation to the touch; there is fluid under the skin, and not unfrequently under the fascia also, and possibly under the pericranium; but a puncture leads to no good result; the fluid is not pus, but a viscous and colorless albuminous matter, which is speedily absorbed when the disease puts on a curative action. Celsus alludes to this when he says that the tumor "never maturates thoroughly," that it contains "more corrupt matter than a boil, and is also more deeply rooted."

---

[1] Hence, doubtless, the term kērion and melikerion, or honeycomb, the puffed interfollicular spaces representing the framework of the comb. We have also compared the tumor to a large fleshy strawberry, which it sometimes closely resembles.

[2] Celsus observes that kērion "is a genus of ulcer, so named by the Greeks from its resemblance to the honeycomb. There are two species. One is whitish, and like a furuncle in shape, but larger and more painful. When it maturates, it presents a number of foramina, through which exudes a glutinous and purulent humor; but it never maturates thoroughly. When opened, it is found to contain more corrupt matter than a boil, and is also more deeply rooted. It is seldom met with elsewhere than among the hair. The other kind is smaller, prominent, hard, broad, greenish, pale, and more ulcerated, since the foramina correspond with every individual hair, and give exit to a glutinous palish humor, of the consistence of honey, or resembling the juice of the mistletoe, or sometimes oil. The pain and inflammation are severe, so as, in some instances, to excite a sharp attack of fever. . . . If the usual remedies fail in effecting a cure in either of these diseases, the ulcer should be cut out to the full extent of the diseased structure."

Reviewing the pathognomonic characters of kērion, we shall find them to be, the sudden baldness of the patch, the congested and swollen appearance of the skin, the gaping apertures of the follicles, the pustular spots; these signs forming a kind of first stage of the disease; then the very considerable tumefaction of the skin, the magnified follicles, the puffed borders of the follicles, the copious and peculiar secretion, the tendency to incrustation, the enlargement of lymphatic glands, and the extension of the disease to the deeper tissues of the scalp; lastly, and as a final stage, the more or less permanent baldness of the diseased spot. In a recent, case, the hair may be reproduced on the bare spots, but in one of chronic duration the follicles are too seriously disorganized to produce hair ever again: the hair papillæ are obliterated and destroyed.

Kērion is a disease of childhood and youth; we have seen but one case in the adult, and that was associated with albuminuria. In fourteen cases, the ages of the patients ranged from five to thirteen, nine occurring between five years and ten. Its duration at the beginning of treatment ranged between two months and two years, eight cases having been in existence under three months, and two cases over one year. Of the forms of the disease presented in these cases, eight were examples of kērion dispersum, and six of kērion confertum, one being in the suppurating stage.

Kērion must be regarded as belonging to the same group as trichonosis tonsurans and favus, representing, in fact, an inflammatory and pustular form of the same disease. In trichonosis the part chiefly attacked is the hair pulp and hair; in favus and kērion, the hair follicle; but between the latter there is the marked difference of one being a dry, the other a moist affection; in other respects the latter diseases are so like, as to suggest the idea of kērion being a pustular favus. The phytiform disorganization of trichonosis and favus has not yet been discovered in kērion, but we have no doubt of its presence, and that kērion must be added to the group of diseases of which that peculiar morbid phenomenon is the leading character.

Of the fourteen cases of kērion already referred to, trichonosis annulata was present as a complication in two, and trichonosis tonsurans in one, while a brother of one patient had the former affection, and a sister of another the latter; so that five of the fourteen cases were actually associated either directly or indirectly with trichonosis; and in one of the above cases kērion manifested itself on a patch of trichonosis tonsurans. Other complications of kērion, occurring each in a single instance, were furunculus and eczema.

DIAGNOSIS.—The practitioner must guard himself against confounding the bald patches of kērion with those of area; in one, inflammation or traces of inflammation are present; the other is a baldness resulting from exhaustion of tissue. From the kindred diseases trichonosis and favus, the presence of tumefaction and suppuration is the distinguishing character.

USE.—The cause of kērion is nutritive debility, posssibly asso- d with the strumous diathesis. The remote predisposing causes, he fourteen cases already mentioned, were as follows: anæmia, ola, eczematous diathesis, errors of diet, climate, as illustrated in transfer of India-born children to England, and the nosophytic hesis.

ROGNOSIS.—Kērion is slow and chronic in its nature, but yields rably to the kind of regimen which improves the constitutional rers. When the disease has existed long, the restoration of the on the bald patches must be regarded as hopeless.

REATMENT.—Kērion calls for a nutritious and appropriate diet regimen, and tonic remedies, such as nitromuriatic acid with the ture of orange-peel, quinine with sulphuric acid, phosphoric acid a bitter tincture, chalybeates, and, where a strumous diathesis is pected, cod-liver oil and the syrup of the iodide of iron. As a ial cutaneous tonic, the ferro-arsenical mixture is very valuable this disease when other indications have been fulfilled. Locally, hing with the carbolic acid and juniper-tar soap, together with bing and brushing, must be carefully pursued, painting with the tura picis cum sapone, and dressing with the juniper-tar ointment, the unguentum picis liquidæ, or the latter in combination with the uentum sulphuris. Where the inflammation runs high and there much pain, as also where crusts of considerable thickness and adth have formed, water-dressing must be adopted for a while, il the inflammation has subsided and the crusts have been removed. its inflamed and irritable state, a solution of nitrate of silver, ten ins to the ounce, is often very useful, and subsequently the dressing unguentum picis. To remove any induration that may complicate last stage, the patch may be painted with the compound tincture iodine. When a soothing application is indicated, we may have ourse to the benzoated ointment of oxide of zinc; and to subdue desquamation of the surrounding skin, to the diluted nitric oxide mercury ointment.

SYCOSIS.

Syn. *Mentagra; phyma sycosis,* Mason Good; *ficous phyma.*

YCOSIS (Plate XIV. I.) is an inflammation of the hair follicles, cking chiefly the face, but occasionally extending into the borders the scalp. The inflammation is sometimes marked by redness and quamation only, and may be termed *erythematous;* sometimes it is *ular* or coniform, sometimes *pustular,* sometimes *tubercular,* and, rare instances, *fungous.* It is to the latter form that the disease s its name sycosis, from σῦκον, a fig, because the fungous develop- nt of the disease resembles the pulp of that fruit. The disease is named, from its situation, sycosis menti, maxillaris, capillitii, ercilii, &c., and in the more common seat of its occurrence, namely roots of the beard, it is distinguished as *mentagra.* It is a disease he male of adult age, and is very rarely met with in the female. ycosis erythematosa is known by redness, furfuraceous desquamation, and more or less hardness and thickening of the skin. The disease may exist in this state for months without proceeding further, or may accompany or follow the other forms. It is attended with a feeling of heat and pruritus, and sometimes with tingling and smarting, but rarely with any discharge or exudation from the skin. The erythematous form of sycosis is often met with on the eyebrows and temples, while the rest of the face may be attacked by the more decided follicular forms.

Sycosis papulosa vel coniformis proceeds from vascular congestion of the follicles, which assume a conical figure, and give exit to a hair by the summit of the cone; it occurs chiefly on the chin, at the roots of the whiskers, and upon the upper lip, and is associated with the erythematous and commonly with the pustular form of the disease.

Sycosis pustulosa represents the suppuration of the papule or the substitution for the papule of a conical pustule, filled with a whitish-yellow pus, and transfixed by the hair. The greater or less abundance of the pustules constitutes the chief difference between the papulous and the pustulous variety, and the latter is more or less extensively associated with the erythematous and papulous forms.

Sycosis tuberculosa may be associated with all the three preceding forms, and take the place of a complication of the original disease. Sycosis is always chronic, but the tuberculous character represents a more chronic disposition than any of the rest. The source of the tuberculation is a thickening and infiltration of the skin, sometimes arising from the operation of the erythematous form upon the deeper tissues and afterwards succeeded by the papular and pustular eruption.

Sycosis fungosa or ficosa is more rare; indeed, is very rare in this country, but may be present as a complication of any or all the preceding forms; and in a very severe invasion of the disease, all the pathological forms may be present in the same individual.

Sycosis is essentially chronic in its nature, lasting for many months, often for years, presenting every aggravation of inflammation, giving rise to enlarged lymphatic glands in the neck, sometimes to subcutaneous abscesses, and occasionally to ulceration of the skin and obliteration of the hair papillæ and follicles, so that the part may remain permanently bald and sometimes deeply scarred.

In reference to the situation of sycosis, we have found, in thirty cases, eighteen affected in the chin, six in the upper lip, and four in the maxillary region; while, in two instances, all these parts were attacked, namely, chin, upper lip, whisker, as well as the eyebrow, and the scalp in the region of the temple. The ages of origin of the disease ranged between eighteen and fifty, one patient being sixty-two; but the age at which the disease is most frequent is that between thirty and forty. The duration of the malady at the beginning of treatment extended from a few months to fifteen years, the greater number of examples being found between two and four years.

Sycosis is a dermatophytic disease, presenting the phytiform kind of degeneration already described in connection with other diseases of the follicles, namely, and favus. This phytiform tissue was first described by Gruby in 1842, and was named by him mentagrophyton; he regarded it as a parasitic plant, and detected its presence in the hair-follicles, in the substance of the hair, and also in the epidermal cells of the interfollicular portion of the skin. Latterly it has been identified with the trichophyton met with in trichonosis.

DIAGNOSIS.—Sycosis may be mistaken for acne, unless its relation to the hair be borne in mind; the thickening and condensation of the skin, the papulation, and the pustulation, are peculiar to this disease. Not so easy is the distinction between a mild form of sycosis and impetigo; in the latter case we must make ourselves acquainted with the duration of the disease, and its special localization on the hairy parts of the face.

CAUSE.—The cause of sycosis is debility, chiefly referable to the assimilative system; next in frequency, to local conditions; thirdly, to the nutritive system; and fourthly, to the nervous system. One of the most common of the predisposing causes is cold: the disease is apt to begin in the winter season, and cold may act the part both of a predisposing and an exciting cause. Other remote predisposing causes of debility are, the eczematous diathesis, dyspepsia, struma, syphilis, rheumatic diathesis, errors of hygiene, and organic disease. In one case, the patient, a young man of nineteen, received a severe chill during very cold weather; the chill was succeeded by catarrh, afterwards by furuncle, and subsequently by sycosis; while repeated instances were found to be referable to the chilling effects of draughts of cold air in an otherwise heated atmosphere. The disease is not unfrequently intermittent, making its attack in the winter time, and getting well in the summer.

PROGNOSIS.—Sycosis, as we have seen, is very obstinate, but not dangerous to health, and of late, with an improved method of treatment, has become more manageable than heretofore.

TREATMENT.—The difficulties of treatment of sycosis are proportioned to the difficulty of reaching, with our remedial means, the real seat of the disease, namely, the interior, and often the fundus of the hair-follicle. To effect this object, we must remove the hair by avulsion, and afterwards apply our remedies, the most efficient for the purpose being the bichloride of mercury, either in lotion or in solution in glycerole, the unguentum hydrargyri nitratis, or the unguentum iodidi sulphuris, of the strength of one or two scruples to the ounce.

We must instruct our patient to wash the eruption thoroughly with the carbolic acid or juniper-tar soap, and then to pull out, by means of a pair of tweezers, every hair growing on the diseased part; the process is painful and tedious, but it is the only certain means of cure. The hairs should be drawn out singly and by a steady pull; the most diseased spot selected for a beginning, a small space cleared at first, and enlarged at each sitting, until every hair is removed. One of our patients informed us that he had extracted sixteen hundred hairs from his upper lip in three weeks. The hairs surrounded by a pustule at their base come out the most easily; but fomentation with warm water and washing with the juniper-tar soap diminish the pain of the operation very considerably, and facilitate its accomplishment. After the operation is over for the day, a smear of acetate of lead ointment (gr. v ad ℥j) adds very much to the comfort of the skin. By insisting on this plan the most obstinate sycosis may be brought into a curable state, and often may be cured in the course of a few weeks.

Where any constitutional disorder is present, that must be corrected by the usual means: by aperients, to regulate the secretions; by tonics, to remove debility; and by appropriate dietetic and hygienic means. Arsenic, and the triple solution of mercury, iodine, and arsenic, so useful in many chronic affections of the skin, are impotent in sycosis without the assistance of local treatment.

CHAPTER XXIV.

AFFECTIONS OF THE SEBIPAROUS SYSTEM.

THE SEBIPAROUS SYSTEM is a part of the general follicular system of the skin, sharing, with the hair system and the sudoriparous system, the follicular apparatus of the entire cutaneous surface. The follicles of the hair system are provided with sebiparous follicles or glands; but in treating of diseases of the hairs, we disregard the latter as performing only a secondary office; so, in considering the diseases of the sebiparous system, we do not overlook the connection of the small hairs of the body with the sebaceous apparatus, although we give our attention especially to the latter. In structure, the sebiparous and the hair system have one part in common, namely, the outlet of the follicle; and this is important to be borne in mind.

The diseases of the sebiparous system admit of a primary division, into diseases of structure and diseases of function. The diseases of structure affect chiefly the epidermal lining of the aperture of the follicle and the epithelial lining of the tubuli of the gland.

The diseases of function are: abnormal states of the sebaceous secretion; simple retention of secretion; and retention with inflammation of the adjacent cutaneous textures, the latter constituting acne. In a tabular form, the affections of the sebaceous system may be arranged as follows:—

1. DISEASES OF STRUCTURE.

Hypertrophy of epidermis, Hypertrophy of epithelium,
Cancerous hypertrophy.

2. DISEASES OF FUNCTION.

a. Abnormal secretion.

Stearrhœa, Asteotodes, Allosteotodes.

b. Retention of secretion.

Comedones,	Tumores encystici,
Tumores sebipari,	Tubercula sebacea.

c. Retention of secretion with inflammation.

Acne.

1. DISEASES OF STRUCTURE.

Epidermic hypertrophy is an enlargement of the conical epidermic plug which occupies the mouth of the follicle, an hypertrophy belonging to the corneous tissue of the epidermis. We have seen this disease only a few times, but once in a well-marked degree, when it appeared as a crop of transparent horny papulæ dispersed over the forearms. The papulæ were several hundreds in number, hemispherical, yellowish, smooth, transparent, and extravascular; each papula presenting at its summit the aperture of a pore. They were larger than those of lichen, and, regarding the disease as a papular hypertrophy of the epidermis of the cutaneous follicle, we termed it *papulæ epidermicæ*. Our treatment of this case was daily ablution with the juniper-tar soap and active friction.

Epithelial hypertrophy (Plate XX. figs. 2, 3), to which from its color and laminated appearance we have given the name of **xanthelasma**, affects the deeper-seated lining of the common follicle as well as that of the sebiparous gland, and is apt to spread to the rete mucosum of the interfollicular integument. The morbid tissue is yellow in color, *yellow hypertrophy of the epithelium*, the tint of yellow varying from a pale cream to a bright golden tint. It presents two principal varieties, *papular* and *laminated*, the former being limited to the apertures of the follicles, the latter spreading from one follicle to another, and producing a plate of considerable extent, sometimes smooth and sometimes granulated. The papular variety, *xanthelasma papulosum*, or *papulæ flavæ epithelii cutis*, occurs in the form of papules of considerable size, and may be met with dispersed over any part of the body. The papular are smooth, hemispheroidal, sometimes flattened on the summit, perforated by the aperture of a pore, elastic, insensible, and of a buff or nankeen yellow color. To the eye they suggest the idea of a yellowish-tubercular or cheesy matter deposited beneath the cuticle, but a puncture proves them to be organized and vascular, in consequence of the vascular parietes of the gland being carried upwards to the surface by the growth of the morbid epithelium. They have no tendency to suppurate or ulcerate, but remain permanently on the skin, sometimes increasing slowly in size. In a gentleman, at present under our care, suffering from a chronic syphilitic affection of the tongue and palm of the hands, a crop of these papulæ flavæ are dispersed over the forearms, chiefly on the anterior surface; a few are developed on the back of the hands; there is a small cluster of coherent papules on the point of the elbow, and several on the pinna of the ear. The laminated variety, *xanthelasma planum* or *laminæ flavæ epithelii cutis*, is commonly seen in the integument of the eyelids, *xanthelasma palpebrarum*, and more particularly in persons of the female sex. It is in the eyelids that we most frequently have the opportunity of observing the extension of the morbid change of the epithelium to the rete mucosum; and it is there more or less extensive in distribution. This disorder appears more commonly after the mid-period of life than in youth; and is usually permanent. It presents considerable variety in tint of color, being sometimes cream colored or a light buff, and sometimes a bright golden yellow; it also offers some differences of surface, having reference to its discrete or confluent origin, and to a disposition to spread more or less actively to the neighboring rete mucosum. In the former case (fig. 8) it preserves its papular character, and has a granular appearance; in the latter (fig. 2) it is smooth. This affection is delineated by Rayer in his atlas of plates under the name of "plaques jaunatres des paupieres," and is described by Addison and Gull in the Guy's Hospital Reports, under the name of Vitiligoidea; the papular variety they call V. Granulosa; and the smooth variety, V. plana. The name was suggested by the discoloration of the skin in patches, but is not a happy designation, as the disorder has no relation to the diseases included in the genus vitiligo.

Gull believes he has traced some relation between this disorder and a morbid state of the liver; and the fact of the occurrence of the disease after the mid-period of life, and its association with an accumulation of yellowish and dusky pigment in the rest of the skin, are circumstances favoring this hypothesis. On the other hand, we have twice seen it in young women in whom there was no symptom of torpid action of liver present. The most marked case we have met with occurred in a young woman who was perfectly healthy in all her functions. Again, it is remarkable that the disorder is almost exclusively confined to women.

Regarding these formations as a degeneration of structure, dependent on debility and lowered vitality of tissue, the *treatment* we have to recommend is stimulant and alterative; in the papular form, dispersed upon the limbs, saponaceous ablutions with the juniper-tar soap, followed by friction with the unguentum sulphuris; and in the case of the concentrated form met with on the eyelids, the cautious application of a solution of potassa fusa. In the latter case we have used the compound tincture of iodine and acetum cantharidis without any good result. Constitutionally, we should prescribe the ferro-arsenical mixture, of the strength of three minims of Fowler's solution to the drachm, three times in the day.

CANCEROUS HYPERTROPHY, or epithelial cancer, is apt to show itself at the apertures of the follicles, where it assumes the form of a small tubercle, with lobulated and semi-transparent borders and depressed centre. We have transferred the consideration of this form of degeneration of the epithelial tissues to our chapter on carcinomatous affections of the skin, to which, from the nature of its subsequent history, it more especially belongs.

2. Diseases of function.

The diseases of function, or diseases of secretion of the sebiparous follicles, present two principal heads, having reference to the *excretion* or *retention* of the sebaceous substance. The excreted sebaceous matter may be in *excess*, or it may be *deficient* in quantity, and it may be *altered* in its qualities. When simply detained in the follicles, the aperture of the follicle may remain *open*, or it may be *closed*, and the imprisoned matter may be more or less altered from its normal condition. Lastly, with altered, and commonly, torpid secretion, we may have inflammation of the immediately surrounding tissues.

The diseases of excretion are stearrhœa, or excess of secretion: asteotodes, or absence of secretion; and allosteotodes, or alteration of secretion.

STEARRHŒA SIMPLEX.

Syn. *Seborrhœa; sebaceous flux; cutis unctuosa.*

Stearrhœa, or seborrhœa, commonly presents itself as a greasy condition of the skin (cutis unctuosa), and is usually met with on the face; there is also associated with this state of secretion a certain degree of vascular congestion and general coarseness of structure of the skin; the apertures of the follicles are enlarged, and the interfollicular integument puffed up like the rind of an orange.

Great diversity exists among individuals in relation to the quantity of sebaceous secretion naturally poured out upon the surface of the skin. In certain instances we have occasion to remark a great increase of this secretion, particularly during the progress of constitutional affections in which the activity of the cutaneous circulation is excited. When this condition is present, the skin is bedewed with an oily fluid, which is especially abundant on the nose, face, and head, and upon all those parts of the body in which the glands are present in considerable number. The augmented secretion, after continuing a variable length of time, gradually diminishes without requiring medical treatment, and without giving rise to any unpleasant symptoms, further than those which are necessarily associated with the unsightly appearance of a greasy skin. This affection may be often seen in persons otherwise enjoying excellent health, in whom an overstimulating diet, or some slight disorder of digestion, can alone be assigned as a probable cause. At other times it depends on torpor of the skin, and is associated with general torpor of the whole system.

In more severe cases of the sebaceous flux, the skin is somewhat congested and thickened, the common apertures of the excretory ducts and hair-follicles are enlarged, and the secretion poured out spreads in considerable quantity on the epidermis. This profuse form of the disease is usually met with on the face, continues for a great length of time, and evinces no disposition to improve without medical treatment. Such cases are accompanied with pruritus, and often with shooting pains.

ASTEOTODES.

Asteotodes indicates a deficiency or absence of the natural sebaceous secretion, and the skin as a consequence is dry, dirty looking, and roughened by desquamation. This condition of the secreting function is sometimes met with in elderly persons, or those who have been exposed to extremes of climate or vicissitudes of weather, as in sea voyages. When a certain portion of sebaceous substance is excreted by the follicles, it is apt to concrete upon the skin, and form dry, dirty, closely-adherent laminæ, and excite some irritation of the surrounding skin; and if these laminated concretions be removed, the cuticle is apt to be torn and the skin to bleed; and when neglected, the excoriations may degenerate into an unhealthy secreting surface. An accumulation of these laminæ, with specks of concretion on the face, has been termed ichthyosis, or more properly, sauriosis sebacea. They are commonly associated with a generally sordid condition of the skin.

ALLOSTEOTODES.

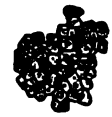
Allosteotodes, or alteration of sebaceous secretion, is commonly marked by alteration of color and density of the secretion. In one case it may be yellow and abundant in quantity, *stearrhœa flavescens*; in another also abundant, but charged with pigment, and almost black, *stearrhœa nigricans;* while in a third the pigment may present a bluish or a greenish tint, the former of these states constituting *stearrhœa cœrulea.* Alteration of density we have already considered in those laminated and squamous concretions on the epidermis, which have been named sebaceous or false ichthyosis or sauriderma.

Stearrhœa flavescens.—In this disorder the abnormal secretion is of a golden or dirty yellow color, and forms a film on the surface, which gives the skin a coarse and disagreeable appearance. The substance is soft, and may be removed more or less easily from the epidermis; sometimes it can be wiped away with the handkerchief, but at other times adheres very tenaciously. When removed, it is produced again in the course of twelve hours, and in twenty-four hours regains its original thickness. The seat of this affection, in the cases which have come under our observation, is, the nose, cheeks, and scalp. The subjects of the disorder on the face were ladies; while the affection of the scalp, though more common in women than in men, we have seen in both.

Stearrhœa flavescens sometimes assumes a chronic character, and the abnormal secretion, instead of being soft and removable by ablution, forms a hard and dense crust, which adheres firmly to the skin, and can only be separated by means of a poultice or water dressing. The skin becomes secondarily diseased in consequence of the irritation caused by the crust, and the affection puts on a troublesome character. A case of this kind, at present under our care, has existed for six years, and was originally excited by exposure to the heat of the sun.

Stearrhœa nigricans.—The abnormal sebaceous substance poured out upon the skin has occasionally a grayish appearance, and in some instances is more or less black. In other respects, namely, as relates to consistence and thickness, it resembles the deposits which are formed in stearrhœa flavescens.

Fig. O.



Examined with the microscope, we found this deposit to correspond with ordinary sebaceous substance, but the nuclei of the cells, instead of being colorless, were black, and every here and there formed masses of considerable size. They were identical in structure with the deepest-colored cells of the rete mucosum of the negro skin, the nuclei being composed of an aggregation of granules more or less shaded with pigment. These appearances correspond with what we had previously observed in some black matter removed from the skin of the face by Mr. Gregory Forbes, in a young lady who was under the care of Dr. MacIntyre.

In Dr. MacIntyre's case, the abnormal secretion could be removed by washing, leaving the skin beneath perfectly natural, and was reproduced in the course of twelve hours. In another case of this kind, which occurred to Mr. Teevan, and of which an account, with a rawing of the appearance of the patient, is published in the twenty-ighth volume of the Medico-Chirurgical Transactions, the skin was o sensitive, that the young lady was induced to abstain from any ttempt at washing away the secretion; and each fresh effusion was receded by a pricking and burning heat. The most remarkable atures in the case of Mr. Teevan's patient are, the suddenness with hich the effusion took place after the skin was perfectly cleared, and he occurrence of black vomitings, black dejections from the bowels, nd a black pigment in the urine, when the secretion on the face was rrested. The young lady who was the subject of this unpleasant ffection had been under the care of Dr. Read, of Belfast, for a severe ain in her side. At that time the cutaneous affection had not ttracted much attention, and Dr. Read was of opinion "that it was onnected with imperfect menstrual function." An analysis of the black secretion from this patient, made by Dr. G. O. Rees, showed its omposition to be, carbon, iron, lime, albuminous matter, fatty matter, nd chloride and phosphate of soda.

In a case at present under our treatment, the blackness is confined o the eyelids and adjacent side of the nose, giving to the young lady ho is the subject of the affection the appearance of having extensive cchymoses of the eyelids (Plate XX. fig. 1). When the discoloraon is coming on, she has a sensation of fulness about the eyes, with ight indistinctness of vision and a little headache. The discoloraon is usually greatest in the evening, and is subject to increase with nxiety or fatigue. When wiped with a cambric kandkerchief, the andkerchief is soiled. Most of the recorded cases of this disease, nd those that have fallen under our own notice, have occurred upon he face, and particularly the eyelids, and have been associated with hat very peculiar affection of the eyeball and the eyelids, first escribed by ourselves under the name of melasma oculi.

It is more than probable that some of the cases of black perspiration mentioned by the old writers were of the same nature as the cases quoted above. The following instance of a similar disorder is published in the Philosophical Transactions, by Mr. Yonge. "A girl, sixteen years old, a daughter of Mrs. Elizabeth Worth, of Plymouth, about the end of April, 1709, had a few hot pimples rose on her cheeks, which bleeding and a purge or two cured. She continued very well till about a month afterwards, when her face, so far as is usually covered with a vizard-mask, suddenly turned black like that of a negro. This surprising accident much frightened her, especially after some foolish people persuaded her she was bewitched, and never to be cured. By prayers, exorcisms, &c., which they used, in order to relieve the fascination, they increased the passion and terror of mind to a great degree, even to distraction, and then desired my assistance. By the arguments which I used, and some composing anti-hysterical remedies, the violence of her fits became much pacified. I directed a lotion for her face, which took off the discoloration; yet it returned frequently, but with no regularity; sometimes twice or thrice in twenty-four hours, sometimes five or six times. It appears insensibly, without pain, sickness, or any symptoms of its approach, except a little warm flushing just before it appears. It easily comes away, and leaves the skin clear and white, but smuts the cloth that wipes it from the face; it feels unctuous, and seems like grease and soot or blacking mixed. It has no taste at all. She never had the menses; is thin but healthful; the blackness appears nowhere but in the prominent part of the face. There are a thousand eye-witnesses to the truth of this uncommon case. The anomalar blackness of the girl's face is now (November) divided into a few dark cloudy specks, which appear but seldom, and nothing so livid as formerly."

STEARRHŒA CÆRULEA is a rarer disease than the preceding forms of morbid alterations of color of the sebaceous secretion, and is due to a blue tinge of the normal pigment of the skin. In other respects it corresponds in every way with stearrhœa nigricans, and, like the latter, must be regarded as a neurosis.

TREATMENT.—All the forms of aberration of sebaceous secretion poured out upon the skin, or deficient in quantity, may be regarded as depending upon want of tone or vitality of the glandular apparatus, combined with more or less irritability of tissue of the skin. Hence the treatment should, in principle, be alike in all: stimulation, by means of saponaceous ablutions, and especially with the carbolic acid and juniper-tar soap, and the subsequent use of stimulating unguents or lotions.

In the different forms of stearrhœa the skin should be well washed with soap, and afterwards bathed with a weak solution of the bichloride of mercury, of the strength of one grain to the ounce. In stearrhœa of the scalp, united as it generally is with concretion and desiccation of the sebaceous matter, the saponaceous ablutions should be followed by an ointment of the nitric oxide of mercury, diluted in the proportion of one part to three, and with abundant brushing and combing.

The asteotodic forms may be similarly treated, the saponaceous ablutions being followed by the diluted nitric oxide of mercury ointment or by amylated glycerine,[1] either simple or containing the bichloride of mercury, in the proportion of four to six grains to the ounce.

Stearrhœa nigricans is a disease of deeper-seated origin than the skin, depending, like other forms of melasma, upon derangement of the nervous system, and morbid sympathy with the great abdominal ganglia and plexuses of the organic system of nerves. It therefore, as well as stearrhœa cærulea, demands a constitutional as well as local treatment, a treatment conformable to the suspected cause of the disturbance, such as hysteria or deranged menstruation, or a treatment founded on the expectant principle.

RETENTION OF SECRETION.

THE DISEASES OF RETENTION of the sebaceous substance are due either to deficiency of expulsory power in the follicles and ducts of the sebiparous glands, to condensation of the secretion, which renders the expulsory power nugatory; or to the absence of excretory opening to the follicle. The diseases belonging to this group are as follows:—

Comedones,
Tumores sebipari,
Tumores encystici,
Tubercula sebacea.

COMEDONES.—The simplest form of this disease is that which is popularly known under the name of *worms* or *grubs*. In this affection the sebaceous secretion is inspissated, and produces complete distension of the related hair-follicle. Reaching the mouth of the latter, the secretion hardens, and becomes deeper in color; and at the same time, from exposure to the dust and dirt of the atmosphere, the extremity is rendered dingy and dark-colored. This discoloration of the sebaceous substance at its extremity gives rise to the appearance of a round black spot, with which, in some persons, the skin of the face, particularly of the nose, is more or less thickly studded. If a fold of skin, including one of these spots, be pressed between the fingers, the concreted secretion is squeezed out, under the form of a little white cylinder, about a line in length, and blackened at its extremity. It is the lengthened figure of this little cylinder, with its dark extremity, that has gained for it its popular designation.

Instead of being soft, and easily pressed out from the hair-follicle, it sometimes happens, where the secretion has remained undisturbed for some time, that the little cylinder has become desiccated, and resembles horn, both in appearance and density. In this case the concretion requires to be dislodged by a pointed instrument, or withdrawn by means of a pair of ciliary forceps. In an instance of the kind now before us, there are several patches of skin, each about the size of a crown-piece, on different parts of the body, closely studded with these horny comedones, every hair-follicle in the affected area being occupied by its little spine, slightly projecting beyond the plane of the surrounding skin.

---

[1] *Vide* selected prescriptions.

The disorder of the sebaceous glands here described is commonly met with on the face of persons in whom the cutaneous circulation is less active than natural, and particularly among the inhabitants of cities and large towns, in whom the brain and nervous system claim an undue proportion of the vital energies, and in whom congestions of the viscera are not unfrequent. It is generally associated with the presence of other diseases of the sebiparous glands, and is always met with in combination with acne. Indeed, one form of acne, acne punctata, is simply an inflammation of the sebiparous gland and related hair-follicle, excited by the overload of inspissated secretion.

When the substance expressed from one of these comedones is examined with the microscope, the sebaceous mass is found to be altered in its composition. Instead of flattened epidermal cells or scales, intermingled with myriads of oil-globules, which compose the normal secretion, the inspissated substance consists of cells containing a granular substance, and a variable number of oil-globules. Besides these cells, several minute hairs are seen in the centre of the mass; they are usually twisted, or bent, and sometimes to such an extent that the tapering point is approximated to the root. Occasionally we have observed the epidermal follicle still surrounding one of the hairs, and more frequently so when one only exists in the sebaceous mass. In this case the bulb of the hair is perfect; its fibrous brush-like root, and the granular mass of the pulp, are distinctly apparent. More frequently, the hairs are broken at their larger ends, and the fibrous structure of the hair is evident. The number of hairs seen in the mass of a comedo appears to have relation to the period of impaction of the sebaceous substance; for when the matter is soft, and of recent collection, we have found only one hair, or at most two, one of the two being surrounded by its epidermal follicle; but when the mass has been impacted for some time, we have counted upwards of twenty. (Plate III. fig. 18.) Gustav Simon remarks, that he has seen as many as forty in some comedones.[1]

This observation is an illustration of the physiology of the invisible downy hairs of the body, and serves to prove that which, *à priori*, we should be led to infer, and indeed that which their presence in the ceruminous substance of the meatus auditorius in such numbers also testifies, namely, that they are continually thrown off, after attaining a certain length, and continually reproduced. In the instance before us, the pathology of the comedones, the sebaceous secretion is poured as usual into the hair-follicle, but instead of being excreted from thence, and diffused upon the skin, collects, probably as a consequence of its altered nature, and obstructs the follicle. The little hair, when thrown off by the usual process, is no longer conveyed away from the follicle with the sebaceous secretion, but is surrounded by the latter in its altered state, and remains enveloped in its substance. By a continuance of this process, a number of hairs may thus be amassed.

Gustav Simon discovered, in 1842, in the sebaceous substance of comedones, and in that which is squeezed out from the cones of acne punctata, certain microscopic animalcules, supposed by the entomologists of Berlin to be related to the genus acarus; hence Simon terms the animalcule *acarus folliculorum*. A description of this animalcule will be found in a separate chapter at the conclusion of the volume.

---

[1] Müller's Archiv., No. 2, 1842.

TREATMENT.—The treatment of comedones requires the employment of such means as are calculated to stimulate the skin gently, and excite it to the due performance of its proper functions. The parts affected should be saturated with soap, and thoroughly washed; they should then be rubbed briskly with a rough towel, until the skin be felt to glow; and this should be repeated twice in the day. The immediate effect of this treatment may possibly be a red and patchy state of the skin, which will speedily pass away. It would be well also to extend the ablutions and frictions to the entire body, for the appearance of the disease in one part is indicative of a generally torpid action of the skin. Cold bathing and sea bathing are also calculated to be beneficial. In some instances it may be necessary to employ some medicinal stimulant, in which case the bichloride of mercury lotion with spirits of wine, or with the emulsion of bitter almonds, will be found to be the best application.

TUMORES SEBIPARI.

Syn. *Molluscum sebaceum; molluscum contagiosum*, Bateman; *molluscum sessile; subglobulosum; parvum; pisiforme.*

In a second group, the secretion is not confined to the excretory duct, but distends also the primary ramifications of that duct, so as to give rise to a small tumor, about equal in size, in its fully developed state, to a ripe currant. (Plate VI. figs. 6, 7, 8.) This resemblance is not confined to size alone, for the sebaceous substance, rising to the aperture of the follicle in the centre of the tumor, appears like the depression on the summit of the currant to which the corolla is attached, while the sebiferous ducts swell out in the circumference of the tumor, and give it a slightly lobulated appearance. When a transverse section of this little tumor is made, it is found to be divided into five or six segments, each of the segments containing a dilated branch of the excretory duct. The swelling of these segments, moreover, gives rise to a depression on the summit of the tumor, corresponding with the aperture of the duct, from which a portion of the concreted sebaceous substance can always be removed by means of a pointed instrument, and it also produces a constriction around the base of the tumor

When these little tumors are left to themselves, they terminate in one of two ways: either by ulceration of the summit and discharge of the sebaceous substance and gland *en masse*, for the gland is but loosely connected with the integument; or by inflammation and sloughing of the entire tumor. In the former case, the collapsed integument, when the base of the tumor has become much constricted, very frequently forms a small, pendulous, pyriform appendage, *verruca acrochordon*, which remains for the rest of life. In the latter, the ulceration sometimes extends deeply into the skin, and leaves behind permanent and unsightly cicatrices.

An instance of this disease lately (March, 1842) presented itself to our notice, which was remarkable for the active development of the tumors. They were first perceived, about fifteen or twenty in number, dispersed upon the skin of the neck, face, and shoulders of a little girl, four years of age. By the advice of the family medical attendant she was sent into the country, and in the course of a few weeks became quite well, all the tumors having disappeared, and no new ones being formed. Soon after her return to town, the mother brought to us her other two children, an infant and a girl six years old. The mother and children were of fair complexion, with light hair, and thin delicate skin: the mother was alarmed at the development of these little tumors on her two other children as well as on herself, "caught," as she imagined, from the child first affected. On the neck of the mother were four or five of these little tumors closely resembling and of the size of currants, constricted at their base, and each presenting an umbilicated depression of impacted sebaceous substance, the aperture of the excretory follicle; and she directed our attention to three ugly scars upon the face left by similar tumors recently healed. On the neck, face, and shoulder of the eldest child were eight or ten little tumors, presenting all their stages of growth. One upon the shoulder was so completely pedunculated, that we were tempted to place a ligature around it, and in a few days it fell off. On the infant they were less advanced, they were just rising from the integument, and each possessed in its centre the dark point of an excretory sebiferous follicle. The little tumors presented no signs of inflammation, they were of the natural hue, or somewhat lighter than the surrounding skin, from the whiteness of the secretion which they contained, and there was no areolar redness around their base.[1] In August a small angry tumor of a similar kind was developed on the margin of the upper eyelid of her little girl, involving two or three of the Meibomian glands. With this exception the children have remained free from any return of the tumors. On inquiry as to the manner in which they disappeared, the mother tells us that they became black, and shortly after were rubbed off accidentally. One of large size, and situated behind the ear, in the child first affected, was snipped off by Mr. Tyrrell. The mother, who is out of health, has three still remaining, one of small size near the angle of the right eye, and two upon the back of the hand.

Upon examining these little tumors we found them to present all the characters of a small conglomerate gland, consisting of several lobules held together by areolar tissue, and the lobules composed of ramified ducts and terminal sacculi. The ducts were remarkably dilated, particularly the central one, and were filled with inspissated secretion. The latter was identical in composition with the concreted sebaceous substance of comedones. The cells were of the same size, had the same appearance, and were intermingled in considerable number with epidermal scales. Under the microscope the sebaceous matter was found to consist of cells heaped together like a pile of eggs, and intermingled with a large quantity of epidermal scales in flakes. The mass was composed solely of these two substances, without any granular matter or oil-globules. The cells were variable in figure, some being more or less cuboid, others irregular from compression, some oblong like the eggs of the ant, others oval, but the most common form was ovoid. The cells presented equal diversity in size, varying in their long diameter from $\frac{1}{300}$ to $\frac{1}{887}$ of an inch, and in their short diameter from $\frac{1}{1430}$ to $\frac{1}{1111}$; some of the cuboid cells measured $\frac{1}{1000}$; the general size of the oval form was $\frac{1}{880}$ long, and $\frac{1}{1000}$ broad; there were several oblong cells, measuring $\frac{1}{535}$ by $\frac{1}{1429}$; and the common dimensions of the ovoid cell were $\frac{1}{720}$ by $\frac{1}{1000}$. This size corresponds very closely with the cells of ordinary inspissated sebaceous substance, whether it be concreted or pulpy; and also with the dimensions of the epidermal scales lying scattered among the cells. The contents of the cells were also various; some were filled with granular substance, in the midst of which, at some one point, a nucleus was perceptible; others contained a homogeneous substance, separated into polygonal masses, mostly of a cuboid shape; while others, again, were more or less filled with minute oil-globules; it is difficult to say which kind of cells were most numerous.

---

[1] For an illustration of this disease, see "portraits of diseases of the skin," Plate XXXVIII. A F.

DIAGNOSIS.—The sebiparous tumor or tubercle, or sebaceous molluscum, is known by its evident dependence on a state of hypertrophy of the sebiparous gland, the ducts of the gland being distended with impacted sebaceous secretion. It is hard, round, pale, umbilicated, and small, more or less constricted at the base, and emits under pressure, from a central aperture, a portion of sebaceous substance which is sometimes milky, sometimes soft, and sometimes dry and hard. The absence of inflammation and suppuration distinguishes it from hordeolum or a small boil; while its hardness and glandular structure are absent in nævus hypertrophicus and molluscum fibrosum, the latter being soft, and consisting of a thin bag of integument inclosing a spongy stroma of imperfectly developed fibrous tissue. The description of acrochordon given by Celsus, applies with so much accuracy to molluscum sebaceum, as to lead us to believe that he had the latter disease in his mind when he penned the following paragraph: "There are certain tumors that resemble warts, although differing from them both in name and in the nature of the disease. One kind the Greeks call *acrochordon*, wherein is a development of something hard and uneven under the skin, the latter retaining its natural color. It is thin towards its extremity, but broad at its base, and of moderate size, rarely exceeding a bean (pea) in dimensions. It is seldom solitary, but commonly occurs in clusters, and principally in children. Sometimes these little tumors terminate on a sudden; but at other times they become inflamed, and are removed by suppuration."

CAUSE.—Sebiparous molluscum takes its origin in debility, both of tissue and constitution. It is met with chiefly in children and women of cachectic or scrofulous diathesis, and especially in the neglected and ill-fed. We have seen it occasionally in the male adult, in one instance excited by shampooing. It is apt to attack several members of a family at the same time and in succession, or it may be found dispersed in a community, hence the suspicion of its contagious nature, and the name given to it by Bateman, namely, molluscum contagiosum. We are unwilling to admit the possibility of contagion, and should be inclined to attribute its invasion of several members of the same family or locality to endemic causes. In a largely populated workhouse we have seen two or three isolated cases, which is inconsistent with the habits of a disease of active contagion.

PROGNOSIS.—Sebiparous tumors are a trivial affection, harmless in its effects, and easy of cure.

TREATMENT.—The tumors may be touched with nitrate of silver, nitric acid, or a solution of equal parts of potassa fusa and water. We prefer the latter. In a case which we saw in the Hospital of St. Louis under the treatment of Lemery, nitric acid was used. Dr. Thomson applied sulphate of copper in his cases, and Dr. Paterson potassa fusa. In some instances we have punctured the small tumor with a lancet, and then inserted a point of nitrate of silver, and occasionally we have found it more convenient to snip them off with scissors. Where the little tumors are dispersed and numerous, and especially when they are distributed over the trunk of the body, a lotion of the bichloride of mercury in almond emulsion will be found particularly useful. It may also be not unnecessary to have recourse to constitutional remedies; tonics for adults, and cod-liver oil, with iodide of iron, or phosphate of iron for children, and where the occasion presents, a generous diet of meat and beer or wine.

CASES OF MOLLUSCUM SEBACEUM.—The history of this peculiar affection would be incomplete without some reference to the recorded cases of the disease. There is reason to believe that Bateman, who was the first to raise the suspicion of contagion in connection with it, adopted the term "molluscum" from the essay of Ludwig,[1] the reporter of the celebrated case which occurred to Tilesius. The author in his preface remarks, "Rheinhardi, visu fœdum, corpus tectum est verrucis *mollibus* sive *molluscis*." Alibert, Biett, Cazenave, and Schedel, on the contrary, attribute the origin of the term to some resemblance existing between the cutaneous tumors and the knots on the bark of the maple. The earliest case of this affection on record, and the one, in fact, which, according to the above supposition, gave the designation to the disease, is the following:—

Case observed by Tilesius.—John Godfrey Reinhardt was born at Muhlberg, of healthy parents, in 1742. At birth his body was covered with excrescences of small size. When seen by Tilesius in his fiftieth year, these excrescences varied in size from that of a pea to a pigeon's egg. Their form was various, some being like warts, others oval, others irregular, and others flattened, either by the clothes of the patient or by pressure against an adjoining part. The most remarkable of these excrescences was one which was developed from the integument over the ensiform cartilage; it was wallet-shaped, tuberculated on the surface, flaccid, and hung as low as the umbilicus. Its tuberculated appearance indicates its constitution of several smaller excrescences. The prevailing color of the tumors is red; here and there one may be seen of a dull yellow or reddish-brown hue; they are spongy and soft in texture, and the skin which supports them is dirty-looking and earthy. "*In medio quarundum maximarum excrescentiarum parvum foramen conspicitur, ex quo nigra corpora oblonga, quæ altius in cute albicantem atque tenerum processum habent, exprimi possunt, quæ vulgo* comedones *appellantur.*" The exrescences are most numerous by the side of the vertebral column, on the thorax, neck, and the sides of the abdomen. On the head one has the appearance of an encysted tumor. Regularly every month some of the tumors become congested, and itch greatly, forcing the patient to scratch them violently. He is the subject of habitual feverishness, which is increased at each fresh attack of congestion of the tumors, and is accompanied by loss of appetite.

---

[1] Historia pathologica singularis cutis turpitudinis J. G. Rheinhardi viri 50 annorum, &c. By Dr. C. F. Ludwig. Lipsiæ, 1739.

Rienhardt is short of stature, has a large head, knees somewhat incurvated, protuberant abdomen, and dull expression of countenance. His position in life is one of indigence and misery. He has invariably refused to permit the removal or puncture of one of the tumors, so that their internal structure is unknown.

Such is the case observed by Tilesius. The question now comes to be, What is the nature of the disease? Let us review the evidence. An unhealthy child, born with disordered sebiparous glands, the ducts of the glands loaded with inspissated secretion, and forming small prominences on the surface of the skin. The child bred in "indigence and misery;" the skin "dirt-colored, and earthy in appearance;" the child and man unsound in body, sluggish in functions. Here, then, are precisely the conditions which we should desire to bring together for the purpose of inducing the disease artificially. For the most conclusive of all evidence, mark the Latin passage quoted from the original; the excretory aperture in the centre of the largest tumors, the altered sebaceous substance squeezed out, nay more, its comparison with "comedones." One of the tumors situated in the scalp we find to have taken on the usual characters of a sebaceous encysted tumor. The sebaceous tumors in this case are remarkable for being the largest on record. But why? Because they were reared in excellent soil, and because they possessed a growth of half a century. One assumes the form of a wallet; but this we find is the aggregation of several, growing from a limited spot of skin, and one richly supplied with sebiparous glands. The wallet is also favored in its growth by the constant irritation produced by the pressure of the shoemaker's last. The constitutional symptoms form no part of the disease, only so far that such an abundance of unhealthy glands would necessarily excite general disturbance, and, aided by "indigence and misery," and by endemic conditions, would conduce to the development of intermittent fever, under which the patient suffered several times.

One other observation is elicited by this case, namely, that no suspicion of contagion appears to have occurred to the minds of any of the persons named in the narrative. The father and mother of the patient never suffered from a cutaneous complaint; his two brothers were free; his two wives were equally exempt, together with an infant child. But this is the typical case of molluscum, with which all future observations must be compared; this is the case which has supplied dermatologists with their definition of the disease, which enabled Bateman to announce that molluscum "is characterised by the appearance of numerous tubercles, of slow growth and little sensibility, and of various sizes, from that of a vetch to that of a pigeon's egg. These contain an atheromatous matter, and are of various forms, some being sessile, globular, or flattish, and some attached by a neck, and pendulous."

Cases observed by Bateman.—This author reports six cases of sebiparous tumors, which he considers, in reference to the case of Tilesius, "a singular species of molluscum." But the only difference between Bateman's cases and that of Tilesius is one of duration, and the same observation applies to all the cases recorded since his time. The sebaceous tumors of Rienhardt were of fifty years' growth. The assumption of the contagion of these cases appears also to possess a very slender and questionable foundation. It will be remarked, that of Bateman's seven cases, three were children of the same family; two were children apparently of another family; and two were servants in the first family, one an undoubted case, the other doubtful. "The face and neck of this young woman," writes Bateman, "were thickly studded with round, prominent tubercles, of various sizes, from that of a large pin's head to that of a small bean, which were hard, smooth, and shining on their surface, with a slight degree of transparency, and nearly of the color of the skin. The tubercles were all sessile upon a contracted base, without any penduncle. From the larger ones a small quantity of milk-like fluid issued, on pressure, from a minute aperture, such as might be made by a needle's point, and which only became visible on the exit of the fluid. The progress of their growth was very slow; for the first tubercle had appeared on the chin a twelve-month ago, and only a few of them had attained a large size." "She ascribed the origin of the disease to contact with the face of a child, whom she nursed, on which a large tubercle of the same sort existed; and on a subsequent visit she informed me that two other children of the same family were disfigured by similar tubercles, and, besides, that the parents believed that the first child had received the eruption from a servant, on whose face it was observed. Since my attention was drawn to this species of tubercle, I have seen it in another instance, in an infant brought to me with porrigo larvalis; and, on investigation, it was found that she had apparently received it from an older child, who was in the habit of nursing it. In this case the milky fluid issued from the tubercles, and may be presumed to be the medium of contagion."

• *Cases observed by Dr. John Thomson and Dr. Carswell.*[1]—The first case occurred in the Canongate, in April, 1821, in three children of the same family. The eldest boy was supposed to have brought the disease from school, and to have transmitted it to his brother and sister. "The contagious nature of the disease is well evinced in the child. On the back of its hands a considerable number of tubercles are seen, which have been produced by applying them to the face, and scratching those situated there during their inflammatory stage. Some of the tubercles are small, others large; some in a state of active inflammation, others nearly of the same color as the skin, and quite free from pain. A few of them are pedunculated, but the greater number are attached by broad bases." "The mother, though in the constant habit of nursing the youngest child, has not been infected."

A second series of cases came more recently under Dr. Thomson's attention. A farmer's child was affected with the characteristic little tumors; he had taken the contagion from the child of a farm-servant. Some of the tumors were situated on the eyelids, and gave rise to conjunctivitis. While suffering from this disease the child rested his face against the neck of a servant girl as she tended him, and she, too, became the subject of sebaceous tumors.

Cases observed by Alibert.—Alibert treats of the moluscum of Bateman, under the name of mycosis fungoides, and he associates the disease with the Amboyna and Mollucca pox, with which he says it bears some analogy. His definition is brief, but vague. He observes: "The disease appears upon one or several parts of the body, in the form of fungoid (fongueuses?) and oval-shaped tumors, which arise and are developed successively upon the face, upper, and lower extremities. These tumors, which are very analogous in texture with champignons, after having reached their full growth, open like decomposing fruits, and give exit to an ichorous fluid, which is often puriform, and sheds around it a disgusting odor." The case from which this definition is derived is as follows:—

The mother of the patient had upon the face an ulcer that was cured by the application of a caustic; his brother died of a cutaneous disease. The man, named Lucas, was fifty-six years of age; his disease was ushered in by a furfuraceous eruption, which was soon after succeeded by the development of small tubercles, smooth and polished on their exterior, and presenting, for the most part, the ordinary hue of the skin, some few having a brownish tint. They were distributed over nearly all parts of the body. They resembled morelles or agarics in form; some were shaped like an olive; and they increased in number to such an extent that fourteen were removed from the face. Their base was large; they were spongy in texture, and they exuded a reddish fluid, which imparted a greenish or yellowish stain to his linen. This fluid concreted on the tumors into the form of a brownish or grayish crust. The majority of the tumors terminated by bursting, and then falling into a flaccid state, leaving in their place a withered skin, which the daughter of the patient removed with scissors, without exciting pain. After experiencing considerable mental affliction, he had an attack of pemphigus. The tubercular disease increased rapidly after this period; the tubercles, on breaking up, gave rise to ulcers, the patient suffering from lancinating pains in these ulcers; he became emaciated and hectic, and died, after keeping his bed for seven months, and being the subject of this disease for five years.

---

[1] Edinburgh Medical and Surgical Journal, vol. lvi. p. 280. Dr. Paterson's paper.

Rayer, who had never seen a case of this disease, remarks with regard to it, that its "seat appears to be the sebaceous follicles."

Cases observed by Biett.—Biett, in the "Dictionnaire de Médecine," referring to the case of Tilesius, remarks, that he had seen two analogous cases, but that in these the tumors were hard and consistent, and contained neither atheromatous matter[1] nor liquid. He also cites the instance of an old man, whose skin was covered with these little tumors without any disturbance of his health. Biett met with another form, "non-contagious molluscum," in young women after parturition. In these cases the little tumors were flattened, slightly fissured (*fendillées*) at their summit, irregular in form, and brownish or fawn colored in tint. They were indolent, and more particularly distributed about the neck.

Cases observed by Cazenave and Schedel.—These authors relate that they saw, in the Hospital St. Louis, a patient affected with prurigo, on whose body were a number of little indolent tumors. The largest were scarcely so large as a hazel-nut, others were no larger than a small pea. They appeared to be formed of a dense fibrous substance, and pressure produced no pain. After describing "molluscum non contagiosum," they continue, "Molluscum contagiosum is a very rare disease, and does not appear as yet (1828) to have been observed in France. It is characterized by tubercles, rounded, prominent, hard, different in size, smooth, transparent, sessile, giving exit by their summit to a white fluid," &c.

Cases observed by Gibert.—This author remarks that he had seen but two or three undoubted cases in the course of fifteen years. One of these occurred in the *service* of Biett, in a child ten years of age, afflicted with chronic enlargement of the liver and spleen, the consequence of a fall on the abdomen. The entire skin was sprinkled over with small whitish tumors, of about the size of peas. They were hard, indolent, and not unlike those little cretaceous tumors occasionally met with in the substance of the liver. Biett considered that the disease should be referred to the genus molluscum of Bateman, a rare affection in our climate, but not unfrequent in India.

Cases observed by Jacobovics.—In the spring of 1839 this author, saw, at St. Louis, two women, one sixty, the other seventy years of age, who were covered with fungiform tubercles. To describe these tubercles would be to repeat the observation of Tilesius. The face, neck, head, and limbs were closely set with the morbid excrescences; at the base of the right hypochondrium of one patient, and on the neck of the other, one of these tumors was as large as the fist, and shaped like a wallet. The tubercles were red in color, and the greater part poured out a small quantity of ill-smelling sero-purulent fluid, which every here and there concreted into thin crusts. No other member of the families of these two women had suffered from a similar disease, and on one the eruption had existed for two years. These cases were not further observed.

---

[1] By the term "atheromatous matter" is to be understood sebaceous substance altered to the appearance and consistence of bread sauce. The word "liquid" no doubt relates to the "milky fluid" of Bateman; an emulsion resulting from the combination of the oily product of the glands with a serous exudation.

In his essay on molluscum, Jacobovics attempts the classification of all the known diseases possessing the general characters of those of Tilesius and Bateman, as three varieties of the genus molluscum. In this attempt he has succeeded in bringing together the most heterogeneous materials under an unmeaning title, a title that would be far better abolished altogether from cutaneous pathology. His three proposed varieties are *tubercula fongosa, tubercula atheromatosa,* and *tubercula variegata.* Under the first of these, which, to illustrate his meaning, should have been *fungiformia,* he has assembled the Amboyna pox, the cases of Tilesius and Alibert, the cancer mollusciforme of Rayer, the cases of Biett, Cazenave, Schedel, and Gibert, and the molluscum pendulum of Willan. Under the second variety he groups those cases which have been assumed to be contagious, namely, those of Bateman and Thomson; and he reserves the third designation for his new variety, the "tubercules bigarrés," which we have already transferred to a more appropriate place, namely, the section treating of sebaceous ichthyosis.

Cases observed by Henderson.[1]—Dr. Henderson has seen five cases of this disease closely corresponding with those of Bateman. They occurred in the children of poor persons; and the finest case was that of an orphan boy, eight years of age, an inmate of a workhouse. Relative to contagion, Henderson speaks with caution. Three of the children were members of the same family; one was a neighbor's child; the remaining one, the orphan child, was an isolated case. The children who exhibited the molluscum in the most marked degree were very unhealthy, having a tumid abdomen and tuberculosis. The two youngest, twins, died of acute hydrocephalus, the orphan boy of peritonitis and other serious disease. One of the twins had two tubercles, the other twelve on the face and one on the ankle; the two remaining children had one each; but in the orphan boy there were considerable numbers. They were principally situated on the lower part of the abdomen, the organs of generation, and the inner side of the thighs; in these regions there were three or four dozen; on the right arm were four, on the left ten. They varied in size, from a millet-seed to a pea; were rounded in form, constricted at the base, and had each a small dark-colored central point, from which might be squeezed a little milky fluid. On the back was an elliptical swelling of large size measuring one inch and a half in its long diameter, and one inch and a quarter across. In the centre of this swelling was a small elevation, a kind of crater, and at the apex of the latter an excretory opening, through which might be squeezed a quantity of soft white substance, resembling finely-ground rice, boiled.

---

[1] Edinburgh Medical and Surgical Journal, vol. lvi. 1841, p. 213

Examining the structure of these little tumors, Henderson found them to consist of vertical cells opening towards the centre, and discharging their contents into a common cavity, which communicated with the exterior by the excretory opening. The large tumor was lobulated in structure, and upon its under surface had the "general appearance of a conglomerate gland;" it illustrated, on a "larger scale, the conformation of the smaller ones." The contained matter of these tumors consisted of nucleated cells, which, according to Paterson, were about the $\frac{1}{1000}$th of an inch in diameter. Henderson inoculated with some of this matter, but without producing any result; and he remarks, very justly, that if the disease be considered to be an affection of the sebiparous glands alone, the inoculated substance would not be likely to take effect, unless it were brought in contact with the internal surface of a sebiparous duct.[1] Some excellent figures accompany this paper; numbers 1 and 5 are admirable for their truthfulness.

Cases observed by Paterson.[2]—This physician records five cases of molluscum contagiosum. The first he saw in a child eighteen months old, robust and healthy, the daughter of cleanly parents, the father being a fisherman. The little tumors had the pathognomonic form, the constricted base, the central aperture, and the oozing of milky fluid. They varied in size from that of a pin's head to that of a horse-bean, the smaller ones resembling "pearly granulations" (tubercula sebacea). They were seated chiefly on the face and neck, and were not painful on being touched. After the appearance of the disease in the child, some tumors of the same character were detected on the breast of the mother at which the child sucked. The bulk of these latter varied from a pea to a hazel-nut, and on being pressed exuded the same milky fluid. A second instance of these little tumors occurred in a female child of two years old. They were between thirty and forty in number, and were distributed on the neck, shoulders, face, and trunk. Their development is ascribed to being nursed by a girl who had some tumors on her skin. The third example is not so satisfactory; it is that of a young man who had several little tumors on the penis, which he said resembled similar tumors situated on the vulva of his wife. Paterson inoculated with some of the milky fluid, but without producing any effect; he gives a good description of the minute structure of the tumors, and their contents, and an excellent figure of the disease.

The remarkable case of albuminous sarcoma of the integument of nearly the entire body, described by Hale Thomson,[3] under the title of "albuminous molluscum," and the case of carcinomatous integu-

---

[1] A more effectual mode of inoculation would be to rub the secretion briskly into the skin in a situation where sebiparous glands are abundant.

[2] Edinburgh Medical and Surgical Journal, vol. lvi. 1842, p. 279.

[3] Lancet, vol. ii. 1841. The paper is illustrated with two excellent lithographic drawings.

ntary tumors, detailed by Dr. Turnbull,[1] of the Huddersfield Infir-
ry, must be referred to a group, embracing *diseases in the form of*
nors affecting the integument in common with other tissues of the body.
ey do not necessarily originate in the skin; indeed, they more fre-
ently take their origin in the subcutaneous textures; they are not
nited to the skin, but involve adjacent tissues; and they are gene-
lly met with in other parts of the body as well as in the integument.

TUMORES ENCYSTICI.

Syn. *Encysted tumors; emphyma encystis*, Mason Good; *wen; follicular tumors; meliceris; atheroma.*

With accumulation of sebaceous substance there exists not unfre-
ently a hypertrophic action in the coats of the follicle; the contain-
g and the contained participate in a mutual growth, and the growth
y be said to be almost unlimited. The gland is obliterated in the
rly stage of the disease by the pressure of the accumulated mass,
d the secretion which follows must be regarded as the product of
e dilated follicle, now converted into a sac or cyst, rather than of
e gland itself.

These encysted tumors are divisible into two groups, one in which
e aperture of the follicle remains *open*, and which is a mere magni-
d comedo, and another, the true encysted tumor, which is a *closed*
c. The encysted tumor with open aperture enlarges horizontally
ore than vertically, and forms an oval-shaped and flattened mass,
at is more perceptible to the touch than to the eye, while through
its aperture, which is sometimes almost closed and sometimes con-
derably dilated, its impacted contents may be reached by means of
probe. The contents of this form of tumor are condensed and solid,
rming a mass that is laminated in texture, and made up of epider-
ic scales, which are glistening in appearance and horny in texture,
d the product of the internal surface of the cyst. These tumors are
mmonly met with in the thick skin of the trunk of the body, and
pecially on the shoulders, and they vary in dimensions from half an
ch to two inches in diameter.

In the compact form of the included mass the pressure of the cyst
uniform in all directions, and as the accumulation bears so large a
oportion in size to the outlet of the sac, there is no tendency to its
pulsion; but occasionally the accumulated matter becomes softened,
ssibly in consequence of inflammation of the cyst, and then a por-
n of the contents may be forced through the opening. In contact
ith the air the exposed matter dries into a hard mass, and by suc-
ssive extrusions the hardened mass is lengthened, until it assumes
e form and characters of a horn. It is hard, semi-transparent,
minated, and in composition as well as in appearance is horny in
nature.

We have already shown that comedones may be converted into
rny bristles projecting from the follicles of the skin, and we are

---

[1] Edinburgh Medical and Surgical Journal, vol. lvi. p. 463.

now describing the manner in which horny bodies of larger growth, the so-called *cornua humana*, are produced. We shall have occasion to recur to the subject again.

TRUE ENCYSTED TUMORS, or tumors with a *closed* cyst, are, with the exception just named, identical in structure with the preceding. They occur most frequently in the scalp, but are met with also on the trunk of the body. They are globular in form, prominent, resembling marbles under the skin; hard at first, but at a later period, when their contents are broken up, soft and tense. They vary in size, from that of a pea to a marble. and sometimes acquire the dimensions of a small orange. Not unfrequently there are two or three, and occasionally as many as ten or twenty on the head; and the tendency to their formation would appear to be sometimes hereditary. When they have been a long time in existence they cause, by their pressure, the obliteration of the hair-follicles, and the skin covering them becomes bald.

In their early stage encysted tumors are hard, from the compact nature of their contents; but when they have grown to a considerable size, or when the cyst has been inflamed, their contents are apt to become softened and altered in quality, sometimes quite fluid, and often fetid. Hence, according to the nature of their contents, they have received the name of *atheroma* when filled with a substance like meal porridge or bread sauce; and *meliceris*, when the contents resemble a semi fluid wax. Occasionally they are filled with an albuminous fluid containing crystals of stearine, and sometimes, amidst their softened contents, are found a considerable number of hairs.

The outer layer of the accumulation of the encysted tumors forms a boundary to the mass, and at the same time takes the place of an epithelium to the cyst; it is commonly, dense and horny in its texture, while the cyst is remarkable for its tenuity. The operation for the removal of the tumor turns upon this point of structure; the cyst should be punctured; the horny epithelium should be seized with the forceps, and held firm, while the thin cellular tissue which holds the cyst in its place should be pressed back until the horny layer with the attenuated cyst is liberated from its attachment, and comes out as an unbroken shell, representing the precise form of the cyst, and inclosing the morbid matter of the tumor.

Celsus gives us the following account of encysted tumors: "They are very small at the beginning, enlarge slowly and by degrees, and are inclosed in a special tunic or cyst; some are hard and resisting; some, soft and yielding; in some, the covering skin is bare; in others, the hair is not affected; and they are generally unaccompanied with pain. Their contents, although they may be predicted, cannot be ascertained with certainty, until they are brought to light. Generally, however, those that are hard and resisting are filled with a calcareous looking substance, or condensed and matted hair; while those that are soft are found to contain a substance like honey or pap, or something similar to the scrapings of cartilage; or a fleshy looking sanguinolent mass; or matters differing in color and appearance; atheroma contains a pap-like pulp; in meliceris, the contents are more liquid nd flow out on pressure." In reference to the treatment of these umors, he observes: "The hair having been removed with the razor, n incision is to be made through the middle of the tumor; the cyst s to be preserved intact; the cyst is quickly discovered, white and lense; it is to be separated from the skin and surrounding parts with he handle of the scalpel, and gradually turned out whole, without dislodging its contents. Where an adhesion subsists between the inferior part of the cyst and a muscle, it is better to cut away the upper part of the cyst than injure the muscle; and, in this latter case, where a portion of the cyst is left behind, the wound should be treated so as to promote suppuration; but where it has been entirely removed, the edges of the wound should be brought together and retained in contact by appropriate means, and subsequently dressed with some agglutinating application."

CORNUA HUMANA.—We have shown, in preceding paragraphs, that the substance of the comedo and the accumulations of the open encysted tumor are in part horny in their nature, and that when exposed to the atmosphere they dry up into a hard mass, scarcely distinguishable from horn, and thus give rise to the so-called cornua humana. We must now apply the same reasoning to the true encysted tumors. The cysts of these tumors and the skin covering them are apt to become inflamed; the latter ulcerates, and the follicular substance is exposed; it dries up into a horny mass, and fresh portions are from time to time extruded, as they accumulate by fresh secretion at the base, until we find produced those extraordinary growths that resemble a ram's horn in shape, and are several inches in length.

In 1843 we removed one of these horns from the thigh of a woman, aged fifty-seven, the servant of a medical friend, the late Mr. Barklimore. Her account of the progress of the growth was as follows: At the age of five-and-twenty, after a severe attack of illness, she observed a small elevation, like a pimple, on the site of the present growth; the pimple increased in size, was somewhat painful, and in about ten years from its first appearance burst, and discharged matter resembling "mashed potato." Subsequently a cavity always remained, from the bottom of which "scurfy" substance could be raised with the finger nail. At the beginning of the current year the present growth made its appearance in the situation of the cavity, and, increasing in ize, gave her much pain and uneasiness. The skin around it was red nd inflamed, and she applied a poultice, which had the effect of making it grow faster. During the summer she suffered much from requent jerks which the growth received from her dress, and awkward lows which it sustained, and in the month of October applied to her master for relief. At this period the growth had acquired considerale size; it was situated on the upper and front part of the thigh, and resented the appearance and characters of horn. It was semi-transarent, yellowish in color, dense and horny in texture, ribbed on the urface, insensible to the pressure of the nail, and firmly rooted in the kin. In general appearance it resembled the curved beak of a bird, f large size, and had a broad and extensive base. Around the base the integument rose to the height of several lines, and in two places to half an inch. The skin was thin and attenuated, as though from the effects of stretching, the epidermis being continuous with the surface of the horn, and gave the idea of a degeneration of the integument into the horny structure.

On examining the horn after removal, we found its base to be formed by the deep stratum of the corium, so that it was obviously a cutaneous formation. The base was oval in shape, and measured in long diameter one inch and a half, and in the opposite direction one inch and a quarter. The horn was two inches and three-quarters in length, by two inches in greatest breadth, and its elevation above the surface was one inch and a quarter. The latter measurement was that of the vertical thickness of the horn; for, in consequence of its mode of growth, its long diameter lay parallel with the surface of the skin. The sebaceous accumulation must originally have formed a prominent tumor, from the side of which the protrusion took place; the thin integument covering the other half still retaining its elevation from distension. Traces of this mode of formation are still apparent upon the surface of the horn. Subsequently the thin integument became inflamed and ulcerated, and receiving no granulations from beneath, desiccated upon its horny contents. The ulceration was the cause of the redness and pain of which the patient complained, and its extent is marked upon the horn by a rough discolored surface of a circular figure, surrounded for more than two-thirds of its extent by a margin of thinned integument. The weight of the horn was six drachms.

The section of the growth presents all the characters of horn; it is laminated longitudinally, the laminæ being distinctly traced, by their difference of tint, from the base to the apex. At the apex it is split in the direction of its laminæ, and several external lamellæ are partly separated from those beneath.

In minute structure it is composed of flattened epithelial cells, closely condensed, and in some parts having a fibrous arrangement. The epithelial scales are somewhat larger than those of the epidermis, and possess nuclei, a circumstance which confirms the analogy between the inflected follicles of the skin and those larger inflections lined by mucous membrane. The flattened cells measured in long diameter from $\frac{1}{700}$ to $\frac{1}{300}$ of an inch; and in short diameter from $\frac{1}{1000}$ to $\frac{1}{350}$; the average of these measurements being $\frac{1}{500}$ for the long, and $\frac{1}{650}$ for the short diameter. The nuclei are, for the most part, oval in shape, the long diameter measuring $\frac{1}{2500}$, the short $\frac{1}{3500}$ of an inch.

We made no chemical analysis of the horn in the present case, but this has been done repeatedly on the Continent. M. Dublanc has published an analysis of human horn in the "Journal de Pharmacie,"[1] and another analysis was made of a horn, which is deposited in the Dupuytren Museum.[2] Both analyses go to show that human horn is chiefly composed of albumen, a small quantity of mucus, phosphate of lime, chloride of sodium, and a trace of lactate of soda.

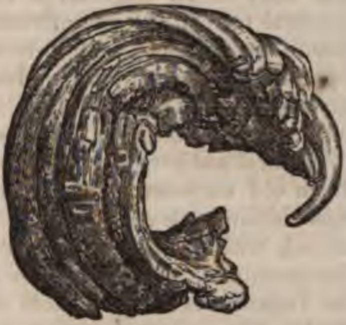
---

[1] March, 1830.

[2] Cruveilhier. Anatomie Pathologique, liv. 24, vol. 2; and Journ. de Méd. Prat. de Bourdeaux, 1835.

Since the occurrence of the above case, we have met with many instances of horn in the human subject; one was on the shoulder, two at the root of the nose, and one on the penis. The latter measures in its dried state one inch in length. We also possess, the contribution of an unknown friend, a fine specimen of horn which grew "on the head of an adult male during a period of nine years." It looks as if it had been broken away from its attachment, and is twisted like a ram's horn. It measures, in its dried state, somewhat more than four inches and a half in length, and two inches and three-quarters in its greatest circumference.

Fig. P.



The subject of horns in the human person very early attracted the attention of observers, and their occurrence seems to have been more frequent among our forefathers than at the present day. This circumstance may be explained by referring to the improvements in surgery, and to the more general diffusion of a knowledge of its elementary principles. On a recent occasion, namely, the presentation of a paper to the Royal Academy of Medicine of France, by M. Lozes, the committee appointed to inquire into the subject collected seventy-one observations of horny growths from the skin, of which thirty-seven were met with in females, thirty-one in males, and three in infants. Of this number fifteen were seated on the head, eight on the face, eighteen on the lower extremities, eight on the trunk, and three on the glans penis.[1]

In pursuing this inquiry, we succeeded in collecting ninety cases, of which forty-four were females, and thirty-nine males; of the remainder the sex is not mentioned. Of this number, forty-eight were seated on the head, four on the face, four on the nose, eleven on the thigh, three on the leg and foot, six on the back, five on the glans penis, and nine on the trunk of the body. The greater frequency of the disorder among females than males is admitted by all authors, but this fact is most conspicuously shown in the instance of the thigh and of the head; for example, of the eleven cases of horny growth from the thigh, two only were males; and of the forty-eight affecting the head twenty-seven occurred in females, and nineteen in males; in the remaining two the sex being unmentioned. That old age is a predisposing cause of the affection is proved by the greater frequency of its occurrence in elderly persons; thus, of the forty-eight cases in which the scalp was the seat of the growth, thirty-eight were above the mid-period of life; several were over seventy, and one was ninety-seven;[2] three were young persons,[3] and three were infants.[4]

---

[1] Mémoires de l'Académie Royale de Médecine, Juin, 1830.

[2] Gastellier, Hist. de la Soc. Roy. de Méd., vol. i. p. 311. 1776.

[3] Aldrovandus et Bartholinus.

[4] Amatus, Cent. 1, Cur. 1. Zacutus Lusitanus, Prax. Med. Adm. lib. iii. obs. 83. Joseph Lanzoni, Nat. Cur. Ephem. Germ. ann. 4, 1673.

Cruveilhier, remarking on the relative frequency of these growths on different parts of the skin, states that they occur on the posterior and inner part of the thigh, as often as on all the other regions of the body taken together, a circumstance which he attributes to the general use of the chaufferette. But Cruveilhier's statement is not borne out by facts, and numerical data are, as we have seen above, opposed to his opinion. Moreover, he confounds horns with warts and corns, and regards them as the result of cutaneous irritation, and enlarged papillæ with increased secretion of epidermis.[1]

Several authors have mentioned the development of horny growths from old encysted tumors, and have remarked upon their frequent association with such tumors. Sir Everard Home[2] was particularly struck with this circumstance; it was present in all the cases which he examined, but he fails to account for the horny secretion, which he regards as an imperfect substitute for epidermis. Thomas Bartholin, who collected several cases of human horns, speaks of the origin of one from an encysted tumour,[3] and Soemmering,[4] Gastellier,[5] and Caldani,[6] notice the same fact.

Some curious speculations were excited in the minds of the older physicians by the observation of cases of horny growths. Rhodius[7] met with a Benedictine monk who had a pair of horns, and was addicted to rumination, and Fabricius,[8] having seen a man with a horn growing from his forehead, whose son ruminated, is willing to give the father the credit of transmitting this disposition to the son, by virtue of the ruminant character which he bore so obviously upon his head.

The most remarkable case of human horn on record is that of a Mexican porter named Paul Rodriguez.[9] The horn was situated upon the upper and lateral part of the head, was fourteen inches in circumference around its shaft, and divided above that point into three branches. Voigtel[10] cites the case of an old woman who had a horn with three branches growing from her forehead; and Dubois[11] had a woman under his care, in the Hospice de Perfectionnement, with a horn that measured seven or eight inches in diameter at its base, and was six inches in length. The length of the horn, in some recorded instances, is also remarkable. Sir Everard Home[12] saw two cases, in both of which the growth measured five inches, by one inch in diameter. They were curled, and had the appearance of isinglass. In one case the horn was fourteen years growing. Gregory[13] mentions a horn which was removed from the temple of a woman in Edinburgh, and measured seven inches. Chariere,[14] of Barnstaple, saw one growing from the nape of a woman's neck, which measured seven inches. A horn said to be preserved in the British Museum measures eleven inches in length, by two and a half in circumference;[1] and Bartholin,[2] Faget and several other writers, have spoken of horns twelve inches long. A singular instance of horn is mentioned by Cruveilhier, in his "Anatomie Pathologique," as falling under the notice of Dr. Faget of Bordeaux. The subject was a Mexican Indian, and the horn was situated in the lumbar region, on the left side. After growing for three years, it had attained a length of four inches, by seven or eight inches in circumference, and was sawn off by the patient's son; after another three years it was submitted to a similar operation, and at the end of nine or ten years from its first appearance, was extirpated by Faget; the portion removed, with the two portions previously cut off, amounting in length to about twelve inches.

---

[1] Loc. citat.

[2] Philosophical Transactions, vol. lxxxi. p. 95. 1791.

[3] Epistolis.

[4] Archives Générales de Méd., vol. xiii. 1827.

[5] Loco citato.

[6] Dict. de Méd.; Art. Cornée.

[7] Bartholinus, de unicorn. aphor.

[8] De ventriculo. Also, Bartholinus, de unicorn. aphor.

[9] New York Medical Repository for 1820.

[10] Handbuch citat.

[11] Dictionnaire de Médecine; Art. Cornée.

[12] Loco citato.

[13] Sir E. Home's paper; loco citato.

[14] Eodem loco.

In a scarce tract in small quarto, published in 1676, there is "a brief narrative of a strange and wonderful old woman, that had a pair of horns growing upon her head." "This strange and stupendous effect," continues the pamphlet, "began first from a soreness" of the back part of the head where the horns grew. "This soreness continued twenty years, in which time it miserably afflicted this good woman, and ripened gradually into a wen, near the bigness of a large hen egg, which continued for the space of five years, more sadly tormenting her than before, after which time it was, by a strange operation of nature, changed into horns, which are, in show and substance, much like ram's horns, solid and wrinkled, but sadly grieving the old woman, especially upon the change of weather." The horns were shed four times, the first "grew long, but as slender as an oaten straw;" the second was thicker, and on the fall of the latter, two were produced which were broken off by accident. One of these was presented to the King of France, the other is stated to have been nine inches long, and two inches in circumference. The periods of shedding were three, four, and four years and a half. There is an engraving of this woman in Leigh's Natural History of Lancashire, Cheshire, and the Peak of Derbyshire. Her portrait, and one of the horns, is in the Ashmolean Museum, and another of the horns in the British Museum.

The authors who have given their attention to this curious subject are more numerous than might be expected. Bartholinus and Borellus have each collected numerous cases. Vicq d'Azyr[3] treats of the subject in his essay on "Animal Concretions," in 1780; Franc,[4] in an essay "de Cornutis," in Heidelberg; Sir Everard Home, in the Philosophical Transactions for 1791; Alibert, in his "Précis Théorique et Pratique des Maladies de la Peau;" Rudolphi,[5] in a paper read before the Academy of Sciences of Berlin, in 1815; Dauxais, in a thesis published in Paris in 1820; Breschet, in the article "Cornée," in the "Dictionnaire de Médecine;" Cruveilhier, in his "Anatomie Pathologique." The latter author devotes the whole of his twenty-fourth fasciculus to horny growths. And Sir Astley Cooper and Travers, in their Surgical Essays.[1]

---

[1] Eodem loco.

[2] Epistolis.

[3] Hist. de la Soc. Roy. de Méd., p. 184. 1780–81.

[4] Tract. Philolog. Med. de Cornutis.

[5] Vol. ii.

The following case is strikingly illustrative of the mode of growth and appearance of a horn when developed on the face. Louise Marino, an Italian peasant, fifty-four years of age, perceived, in the month of January, a small tubercle of about the size of a millet-seed imbedded in the integument of the root of her nose. The tubercle was attended with a trifling degree of pain and pruritus, but continued to grow with considerable rapidity. On the 30th of October (same year), it had acquired the length of an inch, was of a grayish-brown color, had the diameter of a writing-quill, was grooved along its under surface, and curved like the beak of a bird of prey. It adhered firmly by means of a narrow base to the skin and subjacent cellular tissue. Dr. Portal removed it by incision; the cellular tissue at its base, the periosteum and bone, were perfectly sound.[2]

A similar case to this, in so far as seat and mode of appearance are concerned, has just come under our notice. Finding the horn imperfectly adherent to its base, we displaced it with the nail, and applied caustic to the surface of the sac, from which it had originated. This treatment was successful in preventing its return. Another case of horn has lately been recorded by Mr. Dalby,[3] of Ashby de la Zouch, under the incorrect term of "ichthyosis cornea." The horn was six inches in length, and two and a half in circumference; it originated in an encysted tumor, and grew from the back part of the scalp of an old lady, seventy years of age. At one time it gave rise to so much pain when touched, that she could not bear to lay her head on her pillow. Mr. Dalby's narration is accompanied by a wood-engraving.

TREATMENT.—The treatment of encysted tumors is simply local, and consists in the removal of the contents of the cysts and the destruction of the thin membrane which constitutes the cyst, and which is incorporated with its epithelial layer. In the case of encysted tumor with open mouth, the latter may be dilated or enlarged by incision, the accumulation may be removed, and the surface of the cyst pencilled with a solution of potassa fusa (partes æquales) or rubbed with the solid nitrate of silver. The encysted tumor without aperture, or true encysted tumor, requires to be incised to an extent corresponding with the breadth of the tumor. The incision brings into view the contents of the cyst, and with them the firm, horny, capsule-like outer layer which is adherent to the surface of the cyst. This horny layer should be seized and held firmly with the forceps, and the vascular tissues pressed back with the handle of the scalpel, until the shell is drawn out entire and unbroken. The tearing away of the horny layer is a sufficient stimulant of the cyst, and no other treatment is required; the blood that fills up the vacuity after the mass is withdrawn should be left to coagulate and cement the edges of the incision, and serve the purpose of an adhesive bond.

Horny growths are to be softened with water-dressing or poultice.

---

[1] Part 2.

[2] Il Filiatre, Sebezio, February, 1842.

[3] Lancet, vol. ii. 1850, p. 342.

nd then removed; painting the surface of the cyst with the strong otash solution, or rubbing it with nitrate of silver; operation with he knife is wholly unnecessary.

TUBERCULA SEBACEA.

Syn. *Tubercula miliaria; exormia milium*, Mason Good; *grutum; milium*, Plenck; *follicular elevations*, Rayer; *pearly tubercles; der gries*, Germ.

There is another form of enlargement connected with the secretion of the sebiparous follicle which is not an affection of the gland like the sebiparous tumor, but a mere accumulation of the cell-element of the sebaceous secretion in the upper stratum of the corium, and possibly one of the ramifications of the gland, but without any opening communicating with the exterior. It is not unlikely that in its origin it may be an aborted follicle. The accumulation is small in quantity, pearl-like in whiteness, *pearly tubercle*, round in its figure, prominent, and of about the size of a millet-seed; hence the terms *grutum* and *milium* assigned to it by Plenck, and *miliary tubercles* by ourselves.

The sebaceous miliary tubercle is commonly met with in clusters on the face of young persons, and most frequently upon the eyelids. We have sometimes seen instances in which the face was disfigured by the small tubercles, sprinkled by hundreds through the skin.

Occasionally, examples occur in which calcareous matter, phosphate and carbonate of lime, are deposited in the epithelial cells composing this accumulation, and the tubercles become entitled to the denomination of *calcareous miliary tubercles*. Meckel found a number of these concretions in the skin of the gluteal region; Voigtel[1] records an instance as occurring on the forehead and root of the nose; and Vogel[2] has described another affecting the scrotum. The integument of the scrotum was the seat of severe itching; on the cessation of the itching a number of small conical tubercles were developed, which increased to the magnitude of a pea or hazel-nut. After reaching maturity, the little tubercles wasted and became dry, and were followed from time to time by successive crops. At the period of detailing the case they were one hundred and fifty in number, seated in the corium. The contents of the tumors were a white greasy and softish substance, like atheroma, chemically composed of carbonate and phosphate of lime, with a trace of soda, a small portion of fat, and some extractive matter.

Dalrymple called attention to a similar fact in relation with a small encysted tumor of the eyelid, and showed the seat of the calcareous matter to be the epithelial scales of which the tumor consisted. Instead of presenting their natural transparency, the scales "were thickened and hard, and contained granular, earthy molecules, which could be removed by immersion in weak muriatic acid." Gulliver ascertained the earthy matter to be phosphate of lime, with a trace of the carbonate of the same earth.[1] Dalrymple informed us that he had, since the publication of the preceding, seen a second instance of the same disease.

---

[1] Handbuch der Pathologischen Anatomie.

[2] Algemeine Zeitung fur Chirurge innere Heilkunde und ihrer Hülfswissenschaften, July, 1841.

Other forms of follicular tubercle are occasionally met with on the edges of the eyelids, of which the contents are a serous fluid, forming a *serous cyst*, which, depending from the upper eyelid, may become an obstacle to vision. Sometimes they are as small as the millet-seed, and sometimes enlarge to the size of a grape. Another of these serous sacs is remarkable for the transparency and extreme toughness of its cyst, and, from some fancied resemblance, has been termed *grando*, or hailstone, and also CHALAZION. The integument covering it is extremely attenuated and semi-transparent, and small vessels may be seen meandering over its surface. Celsus observes: "In the eyelids above the eyelashes there is apt to occur a small tubercle, which the Greeks name *krithe*, from its resemblance to a grain of barley. It is slow in maturating. Certain other little tumors, not unlike hordeolum, also make their appearance in the eyelids; they are somewhat different in form, and movable, so as to admit of being rolled with the point of the finger under the skin; hence the Greeks call them *chalazia*."

TREATMENT.—In sebaceous tubercles the principle of treatment is to induce healthy action in the skin by moderate local stimulants, such as the juniper-tar soap, and the bichloride of mercury lotion in emulsion of bitter almonds, and to release the accumulations in the cysts by puncture. The pearly tubercles on the face may be punctured, and the contents squeezed out; so also may the calcareous and the serous cysts; and where they have attained a size of any importance, the cavity of the cyst may be touched with a point of nitrate of silver.

ACNE.

Syn. *Ionthos; varus; whelk; stone-pock; couperose*, Fran.; *hautfinne, kupferfinne im Gesicht*, Germ.

RETENTION OF SEBACEOUS SECRETION within the follicle, occurring in the languid and torpid skin of young persons, is apt to act as an irritant, and give rise to congestion and inflammation of the skin immediately surrounding it; this is the disease which is termed *acne*, apparently a perversion of acme, or more correctly ακμαι; ακμη, *flos aetatis*, points especially to the period of life when the disease prevails; *ionthos* to its association with the growth of the hair at puberty, and *varus* to its deformity, "quia varum corpus facit et inæquale," as Celsus observes.

ACNE (Plate XIV.)[2] has received several specific names having reference to its ordinary periods. In its earliest stage, when only a slight elevation without redness, but hard to the touch and dotted in the centre with the black point of a comedo, it is termed *acne punctata;*

---

[1] Medico-Chirurgical Transactions, vol. xxvi. 1843. p. 238.

[2] For a good example of acne presenting at one view all its various forms, see "Portraits of Diseases of the skin," Plate XXXIX. I.

when the progress of congestion and inflammation has raised the slight prominence into a well-marked conical pimple of a red color, the term *acne coniformis* becomes applicable; in a third stage the summit of the cone is converted into a well-marked pustule, *acne pustulosa*; in a fourth, pustulation is imperfect, and the skin becomes tuberculated by thickening and infiltration of its tissue; this is *acne tuberculata*; while in a fifth, the skin is indurated and deeply scarred, *acne indurata*. Sometimes the whole of these forms are present in the same person, but more frequently the punctated, the coniform, and the pustular form are united, while the tubercular and the indurated form constitute a chronic stage of the disease. In the two latter the skin becomes purple, and often livid, and the disease is usually accompanied with small cutaneous abscesses.

The relative frequency of the four principal forms of acne, as shown in the analysis of one hundred cases, gives, for acne coniformis, the number sixty-five; twenty-five for acne punctata; six for acne tuberculata, and four for acne pustulosa. Of these one hundred cases, sixty were females and forty males, showing a greater prevalence of the disease in the former than in the latter sex.

The situations in which acne is met with are, the face, and particularly the forehead, cheeks, and chin; the back, from the shoulders to the hips, and the front of the chest, especially the sternal groove. In the one hundred cases already mentioned, the eruption was developed on the face chiefly, in seventy-eight; on the back and face in fifteen, and on the chest in seven.

The ages of the patients ranged between ten years and thirty, the latter age being exceeded in three instances only. Between ten and fifteen the number of cases was twenty-eight, more than a quarter of the whole; between fifteen and twenty it was forty-eight, or very nearly one-half of the whole; while the remaining twenty-one, somewhat less than a quarter, fell between twenty and thirty years of age. The chronic and slow nature of the disease is shown by the duration, estimated at the time of application for treatment. In this particular, the disease had lasted between one year and five years in more than one-half, namely, fifty-eight; while in twenty-three, nearly one-quarter, it had endured between five years and ten. Nine of the cases had been in existence between ten years and fifteen, while two exceeded the latter period.

Diagnosis.—Acne is a disease of the follicles, a disease of inflammation, accompanied with accumulation of sebaceous substance, a disease of youth, and a disease of chronic duration. In these respects it s distinct from every other form of eruption, and not to be conounded with gutta rosacea, called in error acne rosacea, which is a isease of mature life, chiefly confined to women; and although tacking the follicles of the face, not dependent on accumulation of ebaceous secretion.

Cause.—Acne is essentially a disease of debility, and especially of utritive debility. In one hundred cases we found only two that we ould designate as dependent on assimilative debility, and one only on nervous debility. The remote predisposing causes made evident by these one hundred cases were as follows: rapid and over-growth, twenty-five; congenital weakness, twelve; anæmia, eleven; deficient and improper diet, seven; errors of air, exercise, and general hygiene, six; and under five each, the following: nervous debility, mental application and study, scarlatina, fever, deranged menstruation, eczematous diathesis, rubeola, dyspepsia, rheumatism, chill, syphilis, variola, vaccination, strumous diathesis, hemorrhage, abscess, depressing climate, and climate of India.

PROGNOSIS.—Although chronic, acne is perfectly curable, the tendency of age is to induce spontaneous cure, but cure may be hastened by medical means, as may be inferred from the examination of the long list of depressing influences involved in the remote predisposing causes.

TREATMENT.—The treatment of acne is indicated by the nature of its predisposing causes, both proximate and remote. The diet of the patient must be nutritious and generous; the regimen, in reference to air, exercise, and amusement, must be equally liberal, and we must aid the weakened energies of the vital powers by suitable tonics; in one series of cases by bitters and mineral acids, and in another by chalybeates. But when the functions of digestion and secretion are properly performed, and the indication is special and not general, and betokens debility of nutritive power rather than faulty assimilation, we may have recourse to the ferro-arsenical mixture, in doses containing two or three minims of Fowler's solution, three times a day.

The local treatment must have for its object to restore power to a weakened tissue, and renovate a languid and torpid condition of the skin. The best remedy for this purpose is the compound hypochloride of sulphur ointment, which should be rubbed into the eruption at bedtime, and washed off in the morning with soap and cold water. Another valuable remedy applicable to acne is the bichloride of mercury in solution in spirits of wine, or in an emulsion of bitter almonds, in the proportion of one or two grains to the ounce. This solution may be dabbed on the eruption night and morning, after ablution with soap and moderate friction with a towel. Sometimes we shall find the saturated solution of pentesulphide of calcium serviceable, and sometimes an ointment of the iodide of sulphur, as recommended by Hebra.

Celsus appears to have considered acne as unworthy the attention of the physician. "It is almost absurd," he says, "to treat vari, lenticulæ and ephelidæ; but a care of personal appearance is a part of the nature of women." Hence, he condescends to inform us that "vari are best removed by applying to them equal parts of resin and powdered alum, mixed together with honey; the skin is to be anointed with this application, and after the lapse of some hours, say in the morning, the remedy should be washed off and the surface lightly smeared with oil."

CHAPTER XXV.

AFFECTIONS OF THE SUDORIPAROUS SYSTEM.

'HE SUDORIPAROUS SYSTEM represents the aqueous element of the icular secretion of the skin, as does the hair system the corneous nent, and the sebiparous system the oily element. The sudoripa- s glands are far too minute to afford the opportunity of tracing with uracy any pathological change that may be taking place in their icture; nevertheless, analogy, as well as observation, leads us to ieve that the glands are liable to certain organic alterations; we re noted in connection with idrosis palmaris a state of *hyperæmia* of se organs; and, in an instance of anidrosis, we detected *atrophy* of glandular tissue; while a state of suppurative inflammation of the nds has been described by Verneuil and Bazin under the name of *lro-adenitis.* Hence, diseases of the sudoriparous system may be ided into two groups, *structural* and *functional;* the functional ctions being manifested by derangement of its peculiar secretion, is the secretion may be *augmented* or *diminished*, in quantity, or it y be *altered* in its physical or chemical qualities. In a tabular form diseases of the sudoriparous system may be enumerated as ows:—

DISORDERS OF STRUCTURE.

Hyperæmia, Atrophia,
Hydro-adenitis.

DISORDERS OF FUNCTION.

Idrosis, Osmidrosis,
Anidrosis, Chromidrosis,
Hæmidrosis.

'YPERÆMIA and ATROPHIA of the sudoriparous glands call for no her notice at present than that which we have already given to n.

'YDRO-ADENITIS was first described by Verneuil, in 1854, as a of phlegmon of the sudoriparous glands, making its appearance ie form of a crop of minute inflammatory tumors, beginning in the stance of the skin, rising gradually to the surface, and terminating he expulsion of a small quantity of pus. They have been most uently seen in the axilla, around the nipple, and in the circumfer- of the anus; and occasionally on the face, ear, limbs, and genital ins; but they may also occur on every part of the body where riparous glands exist. When fully developed they reach the size small pea, and are more like boils than any other form of affection of the skin, but differ from boils in their deep origin, in the absence of elevation and pointing, and also in the absence of core; they burst upon the surface frankly, and, having burst, their course is at an end. The *causes* which are supposed to favor this affection are, external irritation of the skin from neglect of cleanliness, friction, sweating, and the contact of morbid secretions; while the constitutional causes, according to Bazin, are, struma, arthritic dyscrasia, and syphilis. The *treatment* applicable to its cure consists in regulating the general health; the local application of unguentum conii or tincture of iodine, according to the state of sensibility and activity of the eruption; and in the advanced stage, liberation of the pus by puncture.

IDROSIS, also termed ephidrosis, hyperidrosis, and sudatoria, is an augmentation in quantity of the perspiratory secretion, accompanied with some degree of vascular congestion of the skin, by a sense of heat, tingling, or itching, and sometimes by pricking and lancinating pains. When of accidental origin and slight in its nature, it is termed idrosis or sudatoria simplex; but when it prevails as an epidemic or contagious disorder, as did the sweating sickness of the sixteenth century, it is distinguished as idrosis vel sudatoria maligna.

IDROSIS SIMPLEX is apt to prevail in the summer time, or as a clinical affection excited by the heat of bed-coverings and heat of apartment in the winter as well as in the summer season. The perspiration is most abundant on those parts of the body which are rich in follicular glands, for example, the head and face, the armpits, the perineum and groins, the palms and soles, and certain regions of the trunk; and on the more sensitive skin of the sides of the body, the inner side of the arms and thighs, and the front of the abdomen and chest, is apt to be accompanied with an eruption of miliary vesicles, or sudamina, constituting the form of idrosis known as *sudatoria miliaris*.

The fits of perspiration are sometimes preceded by a feeling of chilliness of surface, and sometimes by a flush of heat, the coldness succeeding the flow of the secretion; and are repeated once or twice in the twenty-four hours, sometimes oftener, and chiefly in the night season. They are frequently accompanied with a sensation of faintness and sinking at the epigastrium, sometimes with nausea and derangement of the digestive functions, and sometimes with feverishness.

When idrosis occurs as an acute affection it terminates in one or two weeks, or, if it be associated with any form of illness which tends to maintain an unnaturally heated state of the skin, it may continue for a longer period. It has been known to exist for years, and in the latter form, *ephidrosis chronica*, is unaccompanied with miliary vesicles.

During the excessively hot weather of August, 1856, we had occasion to treat several cases of idrosis. The symptoms were these: after taking food, and sometimes without the stimulus of food, as during the night, the patient was suddenly seized with a feeling of faintness and oppression at the epigastrium; a profuse cold perspiration immediately bedewed the whole surface of the skin, and continued for a space of time, varying between a quarter and half an hour. In some instances these symptoms were repeated at every meal, in others, only once in the day, at dinner or supper, and gave rise to considerable exhaustion and debility. We saw about ten cases, one being followed by vomiting and slight fever. Dupont has published the account of a curious case of chronic general ephidrosis, which lasted upwards of six years. "The woman who was thus affected became pregnant during this time, and was happily delivered of an infant, which she nursed herself. This ephidrosis, which, according to him, was independent of any other affection, after having been fruitlessly combated by various remedies, yielded at last to extract of aconite, given at first in doses of half a grain, and gradually raised till sixteen grains a day were taken."[1] "Hoffman makes mention of a very old man, subject to continual perspiration, so that his whole nourishment passed through the pores." And Willis notices the case of a lady "whose perspirations were so prodigious" that basins were set beneath her "to receive the trickling humor."

Ephidrosis partialis is more common than the general form; sometimes it is confined to the feet or hands alone, at other times to the axillæ, perineum, or scalp, and "Hartmann cites the singular fact of a woman who, during pregnancy, perspired only on the right side of her body."[2] We have at present under treatment a young lady, whose hands are the seat of this disagreeable affection; under the influence of slight nervous excitement, the hollow of the palm fills with secretion, and the perspiratory fluid drips from her fingers as she stretches them out. A gentleman whom we attended lately for severe gastric disorder, called on us one morning, with rills of perspiration running down one side of his forehead and face, the opposite side being dry; and an eminent actor recounted to us the following anecdote of himself: When a young man, starring in America, he had one night, in the summer time, been playing in a tragedy, in which he was violently heated, and had scarcely time to cool, when he was obliged to come on the stage again as Sir Archy MacSarcasm, in Macklin's comedy of Love à la Mode. The make-up for this character required that he should convert his features, by means of paint, into those of an old man. In the course of the play he was struck by perceiving himself "the cynosure of neighboring eyes," particularly those in the front rows of the pit, and concluding that it must be the excellence of his acting which was attracting so much attention, felt highly flattered, and exerted himself to the utmost. From time to time, however, he was startled at the bursts of laughter and applause falling in the wrong places, and was thoroughly puzzled at the unusual sensation he was creating. On retiring to his dressing-room, after making his best and most grateful bow to an hilarious audience, the mystery was explained; it was not his brilliant acting *alone*, which had brought down such noisy honors on his head, but the drollery of his face, one half of which was washed clean of its wrinkles by partial perspiration, and displayed the juvenile features of twenty; while the other half exhibited the care-worn lines and withered seams of eighty. In his case, while one half the face was affected in this peculiar manner, and the other half was dry, his chest was acted on in a precisely opposite way, the perspiratory side being reversed. At a later period of his life the perspiratory action ceased over the entire body, and, as a consequence, he suffered bitterly in his health,

---

[1] Rayer, Translation, page 920. The extract of aconite here referred to is much inferior in strength to the English alcoholic extract, of which the dose is ⅛ to ½ a grain.

[2] Rayer, *loc. cit.*

Chronic idrosis is sometimes hereditary, as in a gentleman whose mother is similarly affected; it began in his case at the age of nine, and has lasted fifteen years; he has two brothers and two sisters; the brothers are similarly troubled, but the sisters have escaped. The secretion is constant in this case, and the cuticle of the palms and palmar surface of the fingers is thick and sodden. In another gentleman the hands have a bright red tint, as though they were stained, and the perspiratory ducts and glands may be seen through the cuticle as vascular points. In the first-mentioned case, the palms of the hands only are affected; in the second, the palms and the soles; while in a third, the soles alone are the seat of the disorder. The latter gentleman is twenty-one; the disease has existed for two years, and is worst in the summer time. The soles are burning hot and red, and so tender as to make walking extremely painful.

The perspiration in idrosis is acid, disagreeable in odor, and so profuse as to produce softening and opacity of the epidermis, which, on the soles of the feet, is often corrugated, like that of washerwomen. The disease is most commonly met with in the summer season, occurring during extreme heat, excessive exercise, &c.

IDROSIS MALIGNA.—The malignant form of idrosis appears to correspond with the sweating sickness of the sixteenth century, a disorder which is no longer met with in England, but which would seem, by the numerous reports made to the Académie de Médecine, to be still prevalent in France. The disease is infectious and contagious, and occurs epidemically. The following brief notice of the disorder is an abstract of the description given by Rayer.

Malignant idrosis is commonly associated with inflammation of the stomach and intestines, inflammation of the lungs, inflammation of the bladder, or inflammation of the cerebro-spinal axis. When the digestive organs are especially effected, the disease is characterized from the commencement, or at an early period, by a severe constriction at the epigastrium, spasm of the diaphragm affecting respiration, distressing anxiety, deeply drawn sighs, feeling of weight in the chest, with a sense and alarm of suffocation, and in some cases, vertigo, violent headache, and nausea. When the lungs are the seat of inflammation, there is a deeply-seated pain in the chest, crepitating rattle in the bronchi, oppressed breathing, frequent full pulse, and sanguinolent expectoration. When the bladder is inflamed, there are pains in the hypogastrium, difficulty in passing the urine, with high color and deficiency of that secretion. And when inflammation of the cerebro-spinal axis is present, there is headache, flushed countenance, full, starting eyeballs, throbbing temples, contracted or fixed pupil, coma, and convulsions. These symptoms occasionally prove fatal in twenty-four or forty-eight hours, or the disease may run on for two or three weeks.

The following cases of idrosis were observed by Marrotte, in the Hôtel Dieu, at Paris, at the close of an epidemic of typhus fever, which raged in that city in 1842. Honoré, in whose wards the patients lay, had never before seen cases of this disease; and Rayer, who is well acquainted with the disorder, had never seen it in Paris.

A young man, twenty-three years of age, was received into the hospital, July 29, complaining of pain in his head, lassitude, great prostration, thirst, and drowsiness. His skin was hot, pulse frequent, tongue and teeth foul; had had no action of bowels, which could only be brought to move by medicine; no rumbling in the iliac fossæ. There were none of the lenticular spots which accompanied the prevailing epidemic. The skin, though very hot, was neither dry nor burning; on the contrary, it was moist. He complained moreover, of an uneasy sensation and feeling of anxiety at the pit of the stomach, which led to the administration of an aperient emetic.

The present symptoms have lasted three days. His first indications of disease were, general uneasiness and loss of appetite, but not sufficiently pressing to induce him to relinquish his duties. Suddenly, in the middle of the day, he was seized with pain in the head and great prostration, which forced him to take to his bed; but he had no rigors, no diarrhœa; his skin was at the same time covered with a moderate, though constant, perspiration.

For two or three days after admission the patient continued in the state above described, without having been benefited by a bleeding from the arm, practised previously to his application at the hospital. After this period the disease assumed all its severity, the prostration and drowsiness were more marked, the perspirations and oppression became more intense. The perspiration streamed forth continually from the skin, the heat of skin increased, the pulse became stronger, and more frequent; the oppression was accompanied by cough and mucous expectoration; and auscultation discovered mucous crepitation throughout the whole extent of the bronchi.

This combination of symptoms persisted in all their force for ten r twelve days; at the expiration of that period the patient felt mproved. His amendment seemed in some degree to have been ffected by a change in the position of his bed to a better ventilated tuation. Under the influence of this change of position the perspitions diminished, the tongue became soft, moist, and simply furred, e teeth became clean, and the thirst was diminished.

On the 25th of August the patient is progressing; the surface is ill moist in situations where the skin is naturally perspirable. esicles are dispersed about the neck and trunk, some being filled ith a milky serum, and surrounded by a slight areola; others being ansparent. The return of appetite is more tardy.

A second case was that of a man, upwards of six feet in height, irty years of age, who had felt, every evening, a sensation of feverhness, for about twelve days; his appetite failed; he suffered from irst; his skin felt burning hot, and he experienced considerable drowsiness. Since his admission the fever has become increased and continued; his skin is covered with a constant perspiration; he has headache, pain in the left side, anxiety, and oppression at the præcordia.

In the course of five or six days the anxiety and oppression have assumed an excessive degree of intensity; he has cough and expectoration, and mucous râles are very obvious throughout the whole of his chest. The perspirations have increased, together with the heat of skin, and the hardness and frequency of the pulse. The abdomen is distended, the tongue thickly furred; there is great prostration and perpetual drowsiness. An eruption of red pimples appeared upon the neck, and spread thence to the face and trunk; in two or three days these pimples were surmounted by vesicles, containing a lactescent fluid, and were followed by successive eruptions of sudamina, chiefly of the phlyctenoid kind, which occupied the vacant spaces between the papulæ.

As the eruption increased and advanced in development, the oppression decreased, the pulse became softer, and the abdomen diminished in bulk. In this patient, as in the former, the bowels were inactive, and required the aid of medicine. His intellectual powers were unaffected, and the appetite returned gradually to its normal standard during recovery. On the 25th of August he was convalescent.

In a third case, the patient was a young man, twenty-four years of age; he had, for some time, suffered from uneasiness, loss of appetite, and lassitude; for which symptoms he was bled from the arm without benefit. He was next seized with headache, vomiting, diarrhœa, and perspirations, and was forced to take to his bed, where he remained for eight days, suffering with perspirations during the whole period.

On admission, August 16th, he was in a state of extreme prostration; heaviness was exhibited in his features, his tongue and teeth were covered with sordes, the perspirations were general and continual; his abdomen was distended; and he suffered from thirst. For several days he remained in this state, answering with difficulty the questions that were put to him. He had retention of urine, and a full basin of clear, urine was withdrawn by the catheter. In seven or eight days from this time his state was improved; the stupor has diminished, and the tongue is moist. The perspirations are mitigated, and this mitigation became strikingly apparent as soon as the patient was removed to a better ventilated situation. They have not yet, however, wholly ceased; the hardness and frequency of the pulse have yielded.

From this period amelioration was as speedy as in the former cases, but the return of appetite was not so marked as is customary after typhus fever; he was not so much emaciated as are patients convalescent from the latter disease, but he appears more debilitated.

Marrotte remarks with regard to these cases, on the exacerbation which took place at the close of the fifth or sixth day; the continuous perspirations which existed at that period both day and night; the intensity of the prostration and drowsiness; the cutaneous eruption which at this period made its appearance, but without being critical; the oppression and anxiety at the præcordia appearing with the perspirations; the protraction of amendment to the term of two weeks from invasion; the continuance of perspirations to the close of the third week, and the marked benefit resulting from better air and ventilation; all of which symptoms he looks upon as pathognomonic.

Contrasting the disease with typhus fever, he recalls the negative characters of sudatoria. There was no diarrhœa in the commencement; there was no headache, rigors, or vomitings, the prostration of the physical powers is rarely so great; it is rare that the tongue and teeth are so speedily covered with sordes, or that drowsiness is so strongly marked. The first week passed away without epistaxis, and without lenticular spots. The pulse of sudatoria, again, has never the smallness and frequency of the pulse of typhus.

TREATMENT.—Idrosis must be regarded as a disease of debility, especially of nervous debility, and treated upon those general principles that are applicable to a similar state, irrespective of the local affection; for example, nutritious and generous diet, and tonic remedies, particularly sulphuric acid in combination with quinine, cinchona, or salicine, or the citrate of iron and quinine. In chronic cases we have had recourse to the ferro-arsenical mixture with much advantage.

Locally, the skin should be washed with the juniper-tar soap, and sponged from time to time with a lotion containing one part of liquor ammoniæ to three of water. In idrosis of the hands and feet an ointment of equal parts of unguentum picis liquidæ and unguentum sulphuris is of much service, with constant ablutions with the carbolic acid and juniper-tar soap. The use of a strong solution of sulphate of alumina and chloride of sodium has been found useful in some instances, as also have a solution of tannic acid, a solution of acetate of alumina, and a sulphur vapor bath. We have sometimes applied, with considerable benefit, a liquid paste of precipitated chalk. A gentleman informed us that he had relieved himself of this discomfort by the use of a brine foot-bath every night. Panarolus, remarking that perspiration of the feet doth very much torment people, continues, "for which I can tell them a speedy remedy, namely, if they put some powder of myrtle into their linen socks; but let them have a care they fall not into worse diseases by the cure of this, as I have often seen; for this excretion preserves from many diseases, and should rather be promoted than any ways checked."

Dr. Druitt has lately drawn attention to the fact that a part of the body bathed or sponged with water as hot as it can be borne, say for sponging 130°, and so treated until the skin tingles with the heat, will remain for some hours afterwards hot, dry, and unperspiring. And he suggests this application in cases of excessive perspiration whether induced by the heat of the weather or by pathological causes, as in partial perspirations, or resulting from organic disease, as in the night sweats of phthisis. Cold bathing, he observes, is followed by warmth and a speedy return of the perspiration; tepid sponging is succeeded by a sense of clamminess and chill, and warm spongings increase the perspiration. To produce the desired effect the water must be hot, almost to scalding.

ANIDROSIS, or simple deficiency of perspiratory secretion, may depend on torpor, or defective nutrition or innervation of the sudoriparous glands, and the glands may, after a time, dwindle into a state of atrophy. Sometimes it is congenital from defective development of the glandular organs. The disorder is not simply an inconvenience, for its destroys the balance of excretion. and more labor is thrown upon the mucous membrane and the kidneys than they are competent to bear. The dryness of skin which we occasionally meet with in some individuals bears no reference to the sudoriparous system, but is dependent on the absence of secretion of the sebiparous glands. In the Philosophical Transactions[1] is recorded the case of a "gentleman near Leyden, who, being much addicted to the study of astronomy, and spending very many nights in star-gazing, had, by the nocturnal wet and cold temper of the air, in such manner obstructed the pores of his skin, that little or nothing exhaled from his body; which appeared hence, because that the shirt he had worn five or six weeks was then as white as if he had worn the same but one day."

We have occasionally met with persons whose skin has failed to perspire in the high temperature of a Turkish bath; and in that very serious disorganization of structure which accompanies elephantiasis Græcorum, exhausted function of the sudoriparous system is a common symptom.

The *treatment* of anidrosis should have for its object to induce more healthy innervation and nutrition of the skin, with the view to restore the normal function of the organ. For this purpose moderate stimulation by frictions, by the juniper-tar soap, by the habitual use of the cold affusion bath on first rising in the morning, and by daily muscular exercise, will be found to be the best remedies.

OSMIDROSIS; *ephidrosis olens*, Mason Good.—Alteration in the physical properties and chemical composition of perspiration is coexistent with augmentation of secretion, and may also occur independently of increase in quantity. The most apparent alteration in physical properties is that which relates to odor, osmidrosis. The perspiration frequently assumes an acid smell, probably from containing a larger proportion than usual of acetic acid, or a rancid odor from excess of butyric acid, or a combination of both, constituting a fetid and disagreeable odor, which has been aptly compared by Rayer to the smell of "rotten straw." The same author remarks, "I had a woman under my care in the Hôpital de la Charité, affected with chronic peritonitis, and who, some time before her death, exhaled a very decided odor of musk: the pupil who called my attention to this circumstance had observed the smell for several days while dressing a blister, but thought it owing to a bag of musk put purposely into the bed to overpower other bad smells.[2] The woman, however,

---

[1] Abridgment, vol. iii.

[2] Mason Good observes, that the odor of musk, although not often thrown forth from the human body, "is, perhaps, the most common of all odors that escape from

ed us that she had no description of perfume about her, and I
ied myself that her linen, which was frequently changed, was not
;gnated with any perfume before being delivered to her from the
lry of the hospital. The odor of musk, the existence of which
:ully ascertained by myself and several physicians, and which
'ery perceptible on the arms and other regions of the body, did
ecome more powerful from rubbing. After continuing for about
days the smell became fainter, and nearly vanished the evening
e the patient's death. Speranza[1] relates a similar case. Schmidt
serted in the Ephemerides Naturæ Curiosarum the account of a
eyman saddler, three and twenty years of age, of rather robust
tution, whose hands exhaled a smell of sulphur so powerful and
rating as very soon to infect any room in which he happened to
We were once consulted by a valet de chambre, who could never
a place in consequence of the unpleasant odor (odor hircinus) he
ehind him in the rooms which he had been occupied in cleaning.
; have been instances of individuals who, to obtain their dis-
e, or immunity from military service, have simulated these
ive perspirations, by rubbing their axillæ with the animal oil of
l, assafœtida, a piece of much decayed cheese, putrid fish, &c.
other author observes, "the sweat of persons with the itch is
o have a mouldy odor, while that of syphilitic patients is said to
sweet. The sweat of rheumatic and gouty persons has an acid
while in putrid fever and scurvy it has a putrid odor; in jaun-
t is said to resemble musk in its smell. In Stark's General
logy we find it stated, that the odor of sweat in scrofula re-
es that of sour beer, while in intermittent fever it smells like
baked brown bread." "Anselmino found free acetic acid in the
of women during their confinement; and, according to Stark,
iantity of free lactic acid is increased in the sweat during scro-
'achitis, and certain cutaneous eruptions." "Anselmino found a
proportion of ammonia in the sweat after an attack of gout
n any other case. Behrend states that the sweat in putrid and
s fever is ammoniacal, and in nervous diseases, according to
ie, it becomes alkaline. All sweat with a putrid odor probably
ns free ammonia. In cases of gouty and urinary concretions,
iantity of phosphate of lime appears to be increased."[2]

Piutti, of Elgersburg, has made some analyses of morbid sweat,

---

n of other animals. We discover it in many of the ape kind, and especially
imia jacchus; still more profusely in the *opossum*, and occasionally in *hedge-*
res, *serpents*, and *crocodiles*. The odor of civet is the production of the civet-
ne, the *viverra zibetha*, and *viverra civetta* of Linnæus, though we meet with
aces of it in some varieties of the demestic cat. Among insects, however, such
re considerably more common, and by far the greater number of them are of an
le kind, and of very high excellence; for the musk scent of the *cerambix*
us, the *apis fragrans*, and the *tipula moschifera*, is much more delicate than
the musk quadrupeds; while the *cerambix suaveolens*, and several species of the
on, yield the sweetest perfume of the rose; and the *petiolated sphex*, a balsam
ighly fragrant, but peculiar to itself." Vol. v. p. 551. Second edition.

ervation d'odeur aromatique exhalée par la peau de l'avant-bras. Archives
es de Médecine. Vol. xxx. p. 399.

ion's Animal Chemistry, vol. ii. p. 108.

succeeded by a sense of clamminess and chi
increase the perspiration. To produce the
must be hot, almost to scalding.

ANIDROSIS, or simple deficiency of p
depend on torpor, or defective nutrition o
parous glands, and the glands may, after
of atrophy. Sometimes it is congenital
of the glandular organs. The disorder is
for its destroys the balance of excreti
upon the mucous membrane and the ki
to bear. The dryness of skin which
some individuals bears no reference t
is dependent on the absence of secreti
the Philosophical Transactions[1] is r
near Leyden, who, being much ad
and spending very many nights in
wet and cold temper of the air, in
of his skin, that little or nothin
appeared hence, because that the
was then as white as if he had w

We have occasionally met v
perspire in the high temperatur
serious disorganization of stru
Græcorum, exhausted function
symptom.

The *treatment* of anidrosi
more healthy innervation a
restore the normal function
stimulation by frictions, b
of the cold affusion bath
muscular exercise, will b

OSMIDROSIS; *ephidro*
physical properties and
existent with augment
dently of increase in
physical properties is
perspiration frequen
taining a larger pro
from excess of but
fetid and disagree
to the smell of " r
woman under my
chronic peritoniti
very decided od
circumstance ha
a blister, but th
the bed to ov

asthenic
the third
lower limbs.
und in the per-
gastric, putrid, and
th; blood, uric acid
d fat. " The following
l in the sweat: quinine,
ssium, assafœtida, garlic,
n blue, and copper."[1]
nnoying affection arises from
wered vitality of the system or
f treatment should be to restore
ble means. When no other indi-
senical mixture may be of service,
the skin. We have administered
view of setting up a catalytic action,
results. The local treatment applica-
ablution with the carbolic acid soap,
ointment, together with neutralizing
carbonic acid, chlorine, or permanganate

sweat, the ephidrosis discolor of Mason
drosis, in some chemical alteration of the
development in the system of some color-
minated by the skin. Cases of black perspi-
quently recorded; and possibly the disease
chapter under the name of stearrhœa
be taken as an example of this affection.
ave also been noticed, and have been regarded

---

[1] Abridgment,

[2] Mason Good of one half the scrotum, Anat., p. 292.—Lemery, His-
from the human 17 enelle, sur les sueurs bleues; Journal

General Pathology, p. 1127; and Baumgärtner, Ele-
apeutics, p. 486.
Obs. 70.—Ephemerid. Nat. Cur. Dec. 1. Ann. 2.

s resulting from the presence in the perspiratory secretion of Prusian blue. Green perspiration[1] was seen in the case of a young lady who had accidentally taken copper with her food; yellow perspiration,[2] possibly deriving its pigment from the biliary secretion, has also been noted; as also have those of a saffron and ruby color.

In a case of green perspiration recorded by Mr. Pritchard,[3] of Leamington, the cause was ascertained to be the accidental exhibition of copper with the food, the food having been prepared in a copper vessel plated with tin, from which a portion of the tin had been rubbed away. The subject of the affection was a young lady of fourteen, who "had for some months evinced much general debility." She was then "seized with an attack of rheumatic fever, which yielded to remedies slowly and unsatisfactorily. After some days, during which the perspiration was considerable, my attention was called to a collecion of light green perspiration between the toes, and underneath the nails of the young lady's feet, while the same appearance was observable in a fainter degree on the upper, but more especially the under urface of the foot."

The TREATMENT of these cases must be similar in principle to that lready indicated for osmidrosis.

HÆMIDROSIS.

Ephidrosis cruenta, Mason Good; *menidrosis; bloody sweat.*

The most common of the morbid discolorations of the perspiration re those of a red hue, which probably owe their peculiar tint to the oloring principle of the blood; hence they call for separate considration. Landerer[4] observed a red perspiration which flowed from he axilla of a patient laboring under fever. Voigtel, also, noticed an nstance of sanguineous perspiration.[5] Du Gard has recorded the ase of a child only three months old, that was "taken with a bleeding t the nose and ears, and in the hinder part of the head, which lasted or three days, and afterwards the nose and ears ceased bleeding, but still

---

e Chimie-Médicale, vol i. p. 330. Billard, Frorieps Notizen, No. 32. Dr. Bleifuss in Wurtemburg Med. Correspond. Blatt. 1835. No. 26. The occurrence of blue pus as been noted by several observers; amongst others, by Dr. Apjohn, of Dublin, nd Dr. Olioli. Dr. Apjohn considered the color to be occasioned by the presence of russian blue. In Dr. Olioli's case, M. Bouchardat detected an organic coloring matter of unknown nature. Dr. Semnola has recorded two cases of blue urine. The oloring principle of blue perspiration is probably of a similar nature. Dr. Maker, f Colmar (1858), records the case of a delicate anæmic girl of nineteen, in whom r many months together, the face, and particularly the eyelids, assumed a blue olor from the exudation of a secretion that could be wiped completely away with cloth moistened in oil. She was dyspeptic, and a sufferer from leucorrhœa, and ccasionally the saliva was blue. Analysis showed the pigment to be Prussian blue.

[1] Borellus, Hist. et. Obs. Med. Phys. Cent. 2. Observatio 54.—Paullini Cent. 1. bservatio 38. John Peter Franck, de curandis hominum morbis. Landerer menons an instance of green milk, secreted by the peripheral lobules of the mammary land in a pregnant woman.

[2] Ephemerid. Nat. Cur. Dec. 1. Ann. 6 et. 7. Obs. 78.

[3] London Medical Gazette, vol. ii. p. 211. 1833.

[4] Buchner's Repertorium, 2d Series, vol. v. p. 234, quoted by Simon.

[5] Stark's General Pathology, p. 1131.

the leading feature of
thinks that the phosphat
Berzelius, more correctly
ent part of the secretion
omits all notice, likewise
analyses made by Pin

Water . . .
Chloride of sodium
Phosphate of am
Acetate of am
Hydrosulphate
Extractive mat

Specific gr

The first was
gout; the second
from a girl of

Of the ab
spiratory flu
hectic disea
(uridrosis),
substances
sulphur,
saffron, o

TREAT
some er
derang
strengt
cation
by in
the b
and
ble
and
ren
of

G
p
n
r

days before the death
after it began to bleed,
head, and streamed out to
lers and at the waist." "It
the bend of its arms, at the
ends."[1]

sion of blood, or of a sanguine-
women, and are referable to
We once saw a young lady, in
place once every fortnight from
size of a half crown, and situated
on each cheek, one on the fore-
more recently we have seen another
temperament, whose face would become
of blood without any lesion of
away the blood the skin looked
the "medical cases" above quoted.
a loss of blood from her "ears,
er fingers, and then at her toes; pre-
corner of the eye; several times by
from the middle of her breast; after-
saphena is pricked in bleeding; then at
hands. Two days after, it flowed from
from the tip of her tongue, and all this
it flowed from her "breast or other
vestige of an orifice to be seen."[3]
ephidrosis cruenta, which he defines as
mixed with blood," has "taken place
sometimes during vehement terror, and
agony of hanging or the torture.[4] It is
in some instances in new-born infants,[5]
force given to the circulation, in conse-
the lungs, accompanied with violent cry-

rosis must be regulated by the nature of
ruation or hysteria will demand a specific
also will the hemorrhagic diathesis, if the
having relation to such a cause.

---

the Philosophical Transactions, vol. i. p. 52.
of red milk secreted by a woman suffering under

Ephemerid. Nat. Dec. 2. Ann. 6. Appendix, pp.

Dec. 2. Ann. 10, Obs. 65.

CHAPTER XXVI.

TRAUMATIC AFFECTIONS.

TRAUMATIC AFFECTIONS of the skin are such as result from the presence of parasitic animals, *upon, in,* or *under* the skin; and the effects of excessive heat and cold. Of the parasitic animals which infest the human integument, the chief are: the entozoon folliculorum, the acarus, the pediculus, the pulex, the cimex, the filaria medinensis, and the œstrus. The entozoon folliculorum is found in the sebiferous follicles, in the midst of the sebaceous matter which forms its food. The acarus scabiei lives within the scarf skin, burrowing and depositing its ova in the epidermis, and drawing its sustenance from the juices of the true skin. The acarus autumnalis, or harvest bug, makes only a temporary sojourn on the skin, for the purpose of supplying its wants, and is simply a transient annoyance; the pediculus also resides upon the skin, clinging to its surface, pediculus corporis; or to the hairs, close to their exit from the follicles, pediculus capitis, and pediculus pubis. The pulex and cimex, the flea, and bed-bug, belong rather to the covering of man, than to his proper self, attacking his skin only for the purposes of food. The filaria medinensis is a slender worm, of great length, a native of tropical countries, which forms for itself an abiding place in the subcutaneous cellular tissue, and sometimes gives rise to considerable pain and inflammation of the part infested. As it is occasionally brought to this country, it calls for our attention with the present group. The œstrus or gadfly, which is known as a persecutor of the horse and ox, and deposits its ova within the skin, that they may be licked up and swallowed by the animal, and undergo their developmental metamorphosis in the stomach of the creature, sometimes attacks the human skin in a similar manner. The occurrence is rare in this country, but far from uncommon in hot climates, and especially in the vicinity of rivers.[1] Lastly, the effects of heat and cold, the one causing burns and scalds, the other gelatio or frostbite and chilblains, require no further illustration than that which they obtain under their respective heads.

The diseases originating from these causes are, SCABIES, the inflammation of the skin caused by the *acarus scabiei;* MALIS, the evil or disease caused by the presence of parasitic animals on the skin; AMBUSTIO, or burn; and GELATIO, or frostbite, the effect of cold acting destructively on the skin; the latter head also includes that common cause of suffering in the winter season, namely, *pernio,* or *chilblain.* We have already treated of scabies in the chapter on Eczematous Affections; and to the natural history of the acarus scabiei we devote a future chapter. The entozoon folliculorum, as it gives rise to no morbid phenomena, but is rather an aid than an impediment to the functions of the skin, will also be considered separately, with the description of the acarus.

---

[1] Howship communicated some cases of this kind to the Medico-Chirurgical Society in 1832.

MALIS VEL MALIASMUS.

Die Insektengeschwulstesucht.

The term malis, the μάλις and μαλιασμὸς of the Greeks, is used as a generic term to signify the presence of parasitic animals on, in, and under the skin, and may be made to include the bites and stings of insects. The animals which are commonly found to draw their nourishment from the human skin are the entozoon folliculorum, acarus scabiei, acarus autumnalis, pediculus, pulex, cimex lectuarius, and filaria medinensis. The effects of the acarus scabiei, constituting the disease scabies, have been already examined; there remain, therefore, to be considered the nature of the suffering occasioned by the acarus autumnalis, and the remaining parasites. This will be discussed under the six following heads, namely, malis acari, malis pediculi, malis pulicis, malis cimicis, malis filariæ, and malis œstri.

MALIS ACARI.

Crinones; die Mitesser.

The acarus, or mite, is very abundantly dispersed throughout nature, existing apparently wherever nourishment is to be found, and representing, among terrestrial and air breathing animals, the infusoria of the aqueous world. Acari are well known to inhabit vegetable substances, such as meal, dried fruits, sugar, &c., and to be the cause of their decay and destruction; in like manner, it is found among animal substances, as cheese, dried meats, and fish, &c., gradually converting the nutritious parts to its own purpose and leaving behind only that which is innutritious or resists its powers of disintegration. The surface of other animals, again, is a region in which animal matters of various kinds are to be met with, either in the form of excretions from the skin, or the juices of the skin itself; hence it is, that in this locality we find the acarus revelling in abundance, sheltered among the lower animals by the hairy coverings, and provided with means of fixing upon and burrowing into the smooth and uncovered skin of man.

To the observers of nature, the large acarus which takes up its quarters on the under side of the common dung-beetle is well known. This creature probably takes advantage of the habits of the beetle to enjoy with him the feast which he laboriously buries in the ground. The acarus casei, or cheese mite, is also familiar to us all; but besides these common examples, we have discovered the acarus on the skin of the pheasant, in the mouse, and in the horse; in the latter constituting the cutaneous disease termed the *mange.*[1] From these observations it may be inferred that every animal has its acarus; and, judging from the great variety of figure which the few examples we have had the opportunity of observing have presented, we should be ready to conclude that each genus or even species of animal had its peculiar acarus, modified in configuration and structure to suit the special circumstances of its existence. Thus the meal-mite and the cheese-mite, imbedded in their aliment, require no special prehensile organs, and are chiefly remarkable for the bush of hairs which spring from their bodies to keep off the particles of their food and protect them from pressure and suffocation. The acarus scabiei is especially constructed for burrowing in the substance of the epidermis; it is furnished with a coat of plate and four strong arms in front, spines set backwards on its body, and four small weak legs behind. The acarus equi, much larger than the acarus scabiei, is also organized for burrowing; as in him the legs are set forwards and backwards, the former being strong, the latter weak; and he is additionally provided with a pair of strong perforating organs, constituting a haustellum, the sides of the haustellum being furnished with recurved lateral hooks. Both the acarus scabiei and acarus equi have suckers attached to their feet; but the acarus autumnalis, being only an occasional parasite, and not organized for habitation in or on the skin, is merely supplied with hooks to grapple with the surface while he is taking in his supply of food.

Fig. Q.

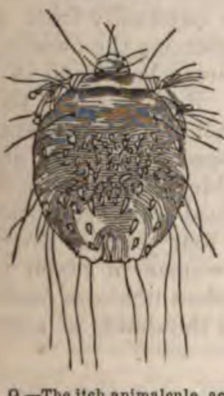


Fig. S.

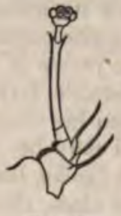


Fig. T.

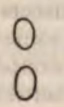


Fig. R.

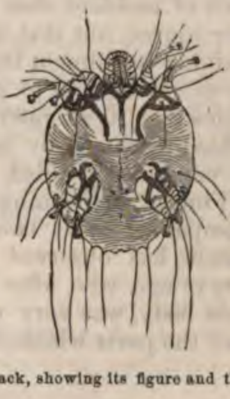


Fig. Q.—The itch animalcule, acarus scabiei, viewed upon the back, showing its figure and the arrangement of its spines and filaments.

Fig. R.—The male itch animalcule, viewed upon the under surface, showing its legs and lobulated feet.

Fig. S.—The foot and last joints of the leg of the itch animalcule.

Fig. T.—Ova of the itch animalcule.

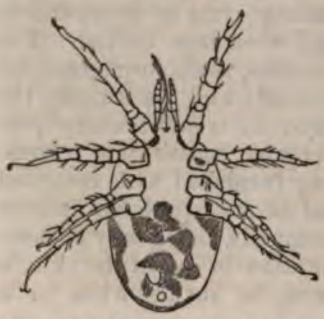
The acarus scabiei and acarus autumnalis are the only two acari at present known which attack the human skin, at least in this country;

---

[1] The acarus equi will be found described by us in the Transactions of the Veterinary Medical Association for 1843-4, page 399. Some figures drawn with the camera lucida accompany the description of the animal.

but it is not impossible that in other countries and climates other parasites of the genus acarus may be met with. In illustration of this suggestion, we may mention that some specimens of acari were sent us a few years since, from the United States of America, by Dr. Hanbury Smith, with an account of the circumstances under which they were obtained. They were found on the body of a lady residing in Stockholm. She was for a long time teased with them, and they gave rise to much inconvenience and vexation. The Stockholm acarus is of large size, $\frac{1}{28}$th of an inch in length, by $\frac{1}{40}$ of an inch in breadth; consequently, somewhat more than three times the size of the acarus scabiei and acarus autumnalis. It is oval in figure, and furnished with eight legs, two of which are set forward and six laterally; therefore the creature is not organized for burrowing. The legs are long, seven-jointed, and armed with a double tarsal hook, which would enable the animal to adhere firmly to the skin; its head is supplied with maxillæ and palpi, or rather chelæ, which are five-jointed; and from between the chelæ is projected a long lancet-shaped haustellum. Judging from the organization of this acarus, we should conclude that its presence on the skin of man was the result of accident, that it drew its subsistence habitually from some other source, but that it was quite capable of piercing the cuticle, and obtaining its aliment from the juices of the human body, and in this way of giving rise to considerable irritation. Probably it is to this species that Rayer refers, when he observes that "symptoms similar to those produced by pediculi may be occasioned by *acarides*, an insect very closely allied to the *ixodes*, but capable, according to Bory St. Vincent, of forming a new class, characterized by a small sucker, accompanied with two feelers consisting of four joints. Bory St. Vincent has observed these insects upon a woman of about forty years of age, who, after having experienced violent itchiness over the whole body, was very much astonished to see thousands of acarides on all the parts which she had scratched."

Fig. U.



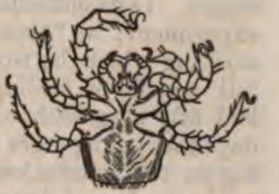
The Stockholm acarus, viewed on its under surface, and magnified 38 diameters.

ACARUS AUTUMNALIS.

Harvest bug; mower's mite; wheal-worm; rouget.

The acarus autumnalis is scarcely larger than the acarus scabiei, measuring in average numbers, about $\frac{1}{100}$th of an inch in length, by the $\frac{1}{180}$th of an inch in breadth; the average size of the acarus scabiei being $\frac{1}{100}$th of an inch in length, by $\frac{1}{145}$th of an inch in breadth; consequently the acarus autumnalis is narrower than the acarus scabiei, and f [illegible] instead of being globular. It is of a reddish color, and p [illegible] th six legs and two chelæ. The chelæ are four-jointed, scarcely reach beyond the level of the maxillæ, and are furnished at the extremity with strong nippers. The six legs spring from the thorax, are long, seven-jointed, and terminated by a short tarsus, with a pair of ample recurved hooks. The haustellum is concealed.

Fig. V.



The acarus autumnalis, viewed on its under surface, and magnified 70 diameters.

The acarus autumnalis is most troublesome in the autumn season, and commonly during harvest, and is met with abundantly on a chalky soil. It makes its attack chiefly on the legs of those who venture into the fields during the harvest season, and from the legs finds its way to every part of the body, causing more or less irritation according to the susceptibility of the individual. Its bite is followed by redness and some degree of swelling, the amount of both depending more upon the cutaneous sensibility of the person than upon the real injury done to the skin; sometimes the bite is followed by a small, glossy, red blotch, white and raised in the centre, like a wheal of urticaria, hence one of the names of the little animal, *wheal-worm;* at other times the inflammatory congestion is as large as a crown-piece; or, when the bites have been numerous, a broad expanse of erythema may be the consequence. If the inflamed spot be examined with care, a minute red point will be observed in the centre; this is the acarus; and it requires some dexterity, on account of its adhesiveness, to remove it from the skin. The irritation caused by this little creature, always troublesome, is, in some persons, so severe, as to amount for the time to a kind of torture.

The best remedies for the bite of the harvest-bug, to destroy the animal and subdue the irritation, are, spirits of wine, carbolic acid in lotion or soap, a lotion of ammonia, containing a drachm of the sesquicarbonate to eight ounces of elder-flower water; a lotion of equal parts of sal-volatile and distilled water, the liquor ammoniæ acetatis, distilled vinegar, the bichloride of mercury in emulsion of bitter almonds, the elder-flower ointment, or an ointment consisting of simple cerate with camphor.

MALIS PEDICULI.

Morbus pedicularis; phtheiriasis; die Laussucht.

Three kinds of pediculi infest the human body, the pediculus capitis, pediculus corporis, and pediculus pubis. The pediculus capitis is found chiefly in children, but is not absent in the adult; the pediculus corporis is met with principally in the adult and elderly persons; and the pediculus pubis is more common in the adult than in the young.

The PEDICULUS CAPITIS is protected from injury by the hair, and deposits its ova, commonly called nits, on the stems of the hairs; the itching which it creates is said to be referable to the movements of the animal on the skin more than to the sting with which it is supposed to be armed; they are named pediculi, says Isidore, "quod magis pedum motu lædant, quam morsu." They are remarkable for the rapidity with which they multiply, and some of the phenomena to which their presence gives rise may be attributed to this circumstance. Leuwenhoeck put their power of procreation to the test of experiment; he "took two females and placed them in a black silk stocking which he wore day and night, that they might have the full benefit of feeding upon him. He found that in six days each laid fifty eggs without exhausting its store, and that in twenty-four days the young were capable of laying eggs themselves; and carrying on the calculation, he estimates that the two females conjointly might produce eighteen thousand in two months." Linnæus gives the louse the credit of saving full-fed children from coughs, epilepsy, &c.

The PEDICULUS CORPORIS is larger than the pediculus capitis; it is also whiter and flatter, and its ova are agglomerated and deposited among the body-clothes of the person. Just as the pediculus capitis never deserts the head, the pediculus corporis is rarely found among the hair, preferring the smooth parts of the body, to which it adheres closely. It is met with in prisons and workhouses, and in those abodes of the poor where cleanliness and nastiness meet; less frequently in hovels, where the mingled odors of cooking, smoking, and match-making are diffused through the atmosphere. Pediculi have delicate noses, and are easily affronted by pungent smells.

Pediculi, like all other animals, are strongly influenced by the conditions among which they are placed; when those conditions are favorable to their existence, they multiply to an enormous extent, and cover the body completely. This is the state to which the terms morbus pedicularis and phtheiriasis are particularly applicable. The irritation of these creatures on the skin, and the scratching of the surface which naturally accompanies the itching, give rise to more or less erythema and lichen, and sometimes to pustules, and then the skin presents the characters of a disease. It is difficult to understand the extraordinary increase of these creatures on the skin in certain cases, even among persons of cleanly habits; and we cannot but conclude, that certain states of the fluids of the body are peculiarly favorable to their nourishment. Thus, they are sometimes found to be produced during an illness, and in some families have been known to invade the body shortly before death, and so become an admonition of the approach of death. We have seen them teeming on the bodies of persons, laboring under malignant disease, in whom the powers of life were scarcely sufficient to preserve the body from decomposition; and probably to this circumstance, to the exhalation of effluvia agreeable to their instincts, their presence in such excessive numbers might be attributed. Stories are on record relative to this disease that read rather like fable than truth, and yet may have had some truth for their basis. "It is recorded by authors, both ancient and modern," writes Daniel Turner, "that diverse persons have come to their ends, being devoured by lice, among whom the poet Alcmanes and Pherecydes Syrus, mentioned by Aristotle, are accounted."

Riolanus says: "Felicitatem Syllæ phtyriasis terminavit; eodem morbo Pherecides, Pythagoræ preceptor, et Alcman perierunt." Of the latter, Q. Serenus has these verses:—

> "Sed quis non paveat Pherecydis fata tragœdi,
> Qui nimio sudore fluens, animalia tetra
> Eduxit, turpi miserum quæ morte tulerunt?
> Sylla quoque infelix tali languore peresus
> Corruit, et fœdo se vidit ab agmine vinci."

Turner suggests another idea with regard to them in the following passage, they "are reckoned to prognosticate death or speedy mortality to those they abandon, or when they shift their quarters unprovoked by medicine or external application."

Some notion has been entertained of the development and existence of pediculi under the skin, and it has been reported by authors that tumors have been opened which were found full of lice. There is certainly no reason against the creeping of pediculi into the sacs of follicular tumors of the skin, feeding on their contents, and afterwards being found to be the sole possessors of these sacs, but in this case they have originally proceeded from the exterior, and crept through an opening which must have been overlooked by the observers in whom the reports originated. It is clear from their organization, that pediculi are air-breathing animals, and that they cannot exist under or in the tissue of the skin, where they would be deprived of that element.

The PEDICULUS PUBIS is very different in form from the preceding; it is rather square-shaped than long; it is flat, has enormous legs, enlarging towards their extremities like the claw of a lobster or crab, and the body is furnished with tubercles, from which proceed tufts of hair. Its resemblance to a crab has gained for it the appellation of *crab-louse;* while other of its names are *plactulæ, petalæ,* and *pessolatæ* (probably from its flatness), and *morpiones.* Although termed pediculus pubis, it is also found on other parts of the trunk of the body where there is hair, in the axillæ, eyebrows, and at the roots of the eyelashes; but however abundant on the rest of the body, it is not met with on the head.

The pediculus pubis gives rise to great itching, hence it has been named *pediculus ferox;* and, by means of its strong feet, armed with a long recurved hook, which closes between two sharp spines, it is enabled to retain its hold upon the shafts of the hair with great tenacity, so much so, in fact, as to render its removal difficult, and scarcely to be effected without the loss of one or two legs. The difficulty is increased by the flatness of the animal, and by the smoothness of its back, over which the finger might pass without detecting its presence. To the eye it is more obvious, and is easily distinguished; and the eye is further attracted to its haunts by the quantity of reddish fecal matter which it leaves upon the skin, entangled among the roots of the hair.

The skin infested by the pediculus pubis is always more or less torn by the nails; and sometimes the animal sets up a degree of irritation which pervades the skin more or less extensively, giving rise

posed to be armed; they are named pediculi, says Isidore, "q
magis pedum motu lædant, quam morsu." They are remarkabl
the rapidity with which they multiply, and some of the pheno
to which their presence gives rise may be attributed to this circ
stance. Leuwenhoeck put their power of procreation to the te
experiment; he "took two females and placed them in a black
stocking which he wore day and night, that they might have
full benefit of feeding upon him. He found that in six days
laid fifty eggs without exhausting its store, and that in twenty-
days the young were capable of laying eggs themselves; and c
ing on the calculation, he estimates that the two females conjo
might produce eighteen thousand in two months." Linnæus give
louse the credit of saving full-fed children from coughs, epilepsy

The PEDICULUS CORPORIS is larger than the pediculus capitis;
also whiter and flatter, and its ova are agglomerated and depo
among the body-clothes of the person. Just as the pediculus c
never deserts the head, the pediculus corporis is rarely found a
the hair, preferring the smooth parts of the body, to which it ad
closely. It is met with in prisons and workhouses, and in
abodes of the poor where cleanliness and nastiness meet; le
quently in hovels, where the mingled odors of cooking, smo
and match-making are diffused through the atmosphere. Pe
have delicate noses, and are easily affronted by pungent smells

Pediculi, like all other animals, are strongly influenced by th
ditions among which they are placed; when those condition
favorable to their existence, they multiply to an enormo
and cover the body completely. This is the state to which
morbus pedicularis and phtheiriasis are particularly appli
irritation of these creatures on the skin, and the
surface which naturally accompanies the itching, gi
or less erythema and lichen, and sometimes to pustul
skin presents the characters of a disease. It is diffic
the extraordinary increase of these creatures on
cases, even among persons of cleanly habits; and
clude, that certain states of the fluids of the
favorable to their nourishment. Thus, they
be produced during an illness, and in some fam
to invade the body shortly before death, and
of the approach of death. e have seen them
of persons, laboring un ant di
of life were scarcely s preserve
sition; and probably stance, to
via agreeable to thei
bers might be attr
disease that read ra
some truth for the
and modern," writ
to their ends, be
manes and Pher

ally, we have seen the petechiæ of flea bites purplish in color, and resembling small bruises; in which case the distinction between them and the spots of purpura is not so obvious. As another ground of diagnosis, it may be observed that the petechiæ of purpura are more general than those produced by fleas.

Fleas, like pediculi, have a great repugnance to powerful and fragrant odors; and these may be employed as a means of protection against their attacks, at least when they are not impelled by too fierce a hunger. Lavender, musk, thyme, are all inimical to the instincts of the flea, and Linnæus commends very strongly the seeds of the sea wormwood, absinthium maritimum, as a pulicifuge.[1] The carbolic acid in lotion or soap will be found to be the best medical remedy.

The PULEX PENETRANS, or chiggre, burrows beneath the skin, commonly of the feet, and by the side of the nails, or on the heels, and there deposits ova. This operation is attended with some degree of itching, and often the flea may be seen through the skin as a dusky spot. After awhile a small tumor, as large as a lentil, rises upon its place of concealment, and when the tumor bursts it is found to contain a small quantity of sanious pus, with an abundance of small, white, oblong bodies, which are the ova of the creature. The tumor is succeeded by a troublesome ulcer, which the hatching ova continue to irritate; new tumors are formed, followed by other ulcers, until the whole foot is in a state of inflammation. The attack of the chiggre is generally confined to the toes, and to the sole of the foot, but sometimes the insect invades the dorsum of the foot; and the ulcerations to which it gives rise have been known to occasion deep ulcers, with necrosis of the bones; and in some few instances mortification and death.

The *treatment* of the chiggre is to remove the sac containing the ova without disturbing the latter, for if any of the ova be allowed to escape, the young pulices will prevent the healing of the sore, and all the inconveniences of the original disease will recur. The negroes and natives of the countries where the chiggre is found are peculiarly dexterous at this operation, which they perform with a pin or needle, and by great care succeed in dislodging the sac entire. After the removal of the sac they dress the wound with the juice of tobacco. A lotion of chloride of zinc would be found an effectual remedy for destroying the ova and young.

MALIS CIMICIS.

The CIMEX LECTUARIUS is a well-known scourge of large towns and cities; the creature lies hidden by day, but issues from its retreat at night, and feasts upon its victim, destroying sleep and rest, and covering the skin more or less extensively with inflamed and irritable bumps. The cimex has received its specific name of *lectuarius* or

---

[1] "While wormwood hath seed, get a handful or twaine,
To save against March, to make flea to refraine;
Where chamber is sweeped, and wormwood is strown,
No flea, for his life, dare abide to be known."—*Jusser.*

lectularius, bed-bug, from being found commonly in the joints and crevices of the wood, of which the bed is constructed; here it propagates largely, and is conveniently located for its nocturnal excursions. But it is not confined to the frames of beds alone; it also takes up its abode in the crevices of the walls and of the floor, in the seams and under the folds of clothes; indeed, in any situation where it can obtain concealment from the light. The creature is round, flat, and of a red color, is provided with a powerful haustellum, which it buries in the skin to reach the nutrient fluids of the body, and has a powerful and offensive cinnamon-like smell.

The bumps occasioned by the cimex lectuarius are more or less raised and inflamed, according to the constitution of the sufferer. They are for the most part white and elevated in the centre, where the puncture is perceptible, and more or less deeply red in the circumference. They admit of being mistaken for erythema papulosum or tuberosum; sometimes they are accompanied with an extent of swelling amounting to œdema, particularly where they occur on or near the eyelids, and have suggested the idea of an incipient attack of erysipelas. In doubtful cases the diagnosis may be made clear by a knowledge of the cause and by the presence of less swollen bumps of a similar kind on other parts of the body.

The best application for the relief of the irritation of these inflamed bumps is, vinegar, Goulard's lotion, spirits of wine and water, or mindererus spirit, the liquor ammoniæ acetatis, a lotion of carbonate of ammonia or sal volatile, or eau de Cologne.

MALIS FILARIÆ.

Helmintiasis; die Hautwurm.

The FILARIA MEDINENSIS[1] is a worm found under the skin in the southern countries of the world, and particularly in India. The worm is of about the thickness of a crow's quill, grows to the length of several feet, is white in color, and commonly single. There may be several worms in different parts of the body, but only one in the particular nest which the worm makes for itself in the subcutaneous tissues. It gives rise to redness of the affected spot, more or less swelling, and pain, all of which symptoms are subject to considerable variety; the redness may be more or less extensive, the swelling œdematous, and the pain very severe. In Hindostan it attacks both natives and Europeans, and has been known to occasion so much inflammation and irritative fever as to have rendered necessary the amputation of a limb.

The filaria medinensis is rarely seen in this country, but it has been occasionally met with in persons returning from a residence in

---

[1] Medinensis, from the prevalence of the worm in the country of Medina, in Arabia. Irk medina of Avicenna; vermis medinensis; nervus medinensis; vena medinensis; vena civilis; *δρακοντία* of the Greeks; dracunculus; Guinea worm. Some of the older physicians, as Galen and Soranus, were of opinion that the filaria was not a worm, but a "nervous concretion," hence the name nervus medinensis. "Pollux calls the dracunculus a piece of corrupted nerve."

India. We have seen two such cases in young military officers; both were out of health, and, in one of the two, we succeeded in performing the feat in which the natives of India are so expert, namely, of extracting the worm. In this case the filaria measured more than a yard in length.

One of the most striking phenomena in connection with these cases is the length of time during which the worm is latent, and develops no symptoms by which its presence may be surmised. Upwards of twelve months had transpired since one of these gentlemen left India, before he became aware of anything being wrong with his foot. He then had what appeared to be a small flat abscess on the instep; the abscess burst, allowing a small quantity of sanious pus to escape, and with the matter a thin white cord, like a piece of bobbin, protruded from the opening. He drew out this protruding bobbin to the extent of a few inches, and in a short time the wound healed. Some weeks later he came to us with a small phlegmon on the side of the foot, more than two inches from the former abscess, and complained of its excessive painfulness. We recommended him to apply a poultice; and a day or two later, perceived a fluctuating point, which we punctured, and a small white loop about an inch long was projected from the puncture, with a very small quantity of sanious pus. We secured the loop, and, drawing upon it gently, one end became released from the opening. The portion which remained measured four inches in length, and this we wound upon a narrow slip of card; we then placed his foot under a stream of cold water, and, winding as we proceeded, gradually and slowly drew out about six inches more. We repeated this operation daily for five or six days, and by that time had extracted the whole of the worm, that is, the whole of that portion of which the broken end had first appeared at the opening made by the lancet, this fragment measuring nearly a yard in length,

On the occasion of his first visit to us there was a good deal of pain extending up the limb; he was unable to walk, and during the progress of the case this pain increased; the skin was œdematous and shining, the ankle swollen and erythematous, and the pain extended, in the course of the nerves of the limb, as high as the groin. Once we were obliged to desist from any further traction on the worm for several days, on account of the severity of the symptoms, which excited some irritative fever, and completely destroyed his rest at night, while the foot was so tender that he was unable to bear the pressure of the bedclothes. Our attention was attracted from the first, before we had discovered the cause of his suffering, to the extraordinary disproportion between the apparent local disease and the amount of pain of which he complained; and there was nothing in the slightly-flushed and somewhat swollen blotch on the side of the foot to explain so much suffering. Looking at the smooth and shining skin covering the worm, we perceived a tortuous and slightly elevated ridge, which no doubt corresponded with the burrow of the animal beneath, and which led us to give credence to the patient's suggestion that the cause might be the guinea-worm; and having never seen a similar case, we watched it with attention; the result we have already stated.

After each daily operation, a linseed poultice was wrapped around the foot and kept on until the following day. When the traction was commenced, from two to four inches of the worm came out easily; then a little more force was required; this force became relaxed under the paralyzing shock of the stream of cold water; but, after a little while, no amount of force, consistent with the integrity of the animal, could succeed in producing a particle more. When it came out easily the patient experienced no pain; but when it came out with difficulty, or resisted further traction, the pain was excessive, and finally, when no more of the animal could be obtained, contributed to the necessity of putting a stop to the operation. The piece of card was then secured near the aperture of the opening until the next day.

It appeared to us that the inflammatory process, and the suppuration which ensued, weakened the vitality of the animal; and that, to secure its existence, it was necessary that it should be enabled to burrow in the tissues and feed upon them, without occasioning that amount of excitement which results in inflammation. This idea is borne out by the fact of no symptoms of the presence of the worm being experienced until the animal has attained the prodigious length of several feet: that then for the first time, and as though from the accident of its coming too near the sensitive tissue of the skin, inflammation is set up, and the inflammation is followed by a scanty suppuration. Bathed in the heated fluid of the inflamed tissues, the worm becomes debilitated and exhausted; and when the abscess bursts, or is opened, a torpid loop of the creature is ejected through the opening. This loop may be handled without exciting contraction or motion; it looks soft and swollen, and sometimes is so much softened that it breaks easily; it is also of a different color to the more vigorous part of the worm; the latter is somewhat transparent; its internal structure may be seen through its tegumentary coat, it is firm and even rigid; the extruded loop, on the other hand, is of an opaque white color, and soft. These differences, moreover, are perceptible in the daily operations on the worm; the first portion, weakened in vitality by exposure at the aperture, by its unnatural confinement around the slip of card, and by its contact with purulent fluid, is soft, swollen, and opaquely white; it yields easily to the effort of traction, to the extent of two, three, or four inches; it then becomes thinner, more transparent, and firmer, and soon resists every amount of force that can be used for its extraction; appearing, from the pain which it occasions, to clasp with its coils the walls of the tortuous burrow in which it is concealed, perhaps clutching fiercely on the thread of a nervous filament. The cold water, falling upon its bed, from a height, paralyzes its muscular structure for a moment, and an inch more of the creature is wound upon the card, until, in a few minutes, it seems to become a part of the flesh itself, and to be immovable. After days of careful and laborious winding of this creature, we were agreeably surprised, on the last day, to find it come out without difficulty, even to the end, perseverance and gradual encroachment had finally exhausted its vitality and powers of muscular resistance.

After the extraction of the worm all pain ceased immediately, and the sinuous ulcer in which the creature had lain imbedded speedily healed. In the second case that came under our notice, there was more pain and inflammation of the foot than in the first, and the worm was so soft as to preclude the use of any force in the attempts made to extract it. At last, after about eighteen inches had been removed, it suddenly broke, and the end became retracted within the skin. As we could not hope to recover the worm, after this accident, for a week or more, we counselled our patient to go into the country to recruit his health, and to return to London as soon as he perceived any reappearance of the worm. He paid us a visit after a few weeks, but it was only to say that he had seen nothing more of his enemy, and that his foot was quite well. We were not surprised at this report, for it appeared to us that the creature had been destroyed by the inflammation and suppuration, and that the inflammatory action had occasioned a spontaneous cure. Whether this result would have followed in the native country of the animal, it is difficult to say; probably it would not.

Another remarkable phenomenon in the history of malis filariæ is the curious fact of the isolation of the animal; and this is the more extraordinary, as the sanious pus which exudes from the sore teems with hundreds of young filariæ, all minute and all of the same size. Why these young filariæ do not grow to the size of the parent and propagate in the tissues of the skin is most difficult to decide; but all our records of the history of the animal tend to show that such is not the case. And the question suggests itself, are these minute worms the young of the Filaria, or do they belong to a different species?

MALIS ŒSTRI.

The deposit of ova by the œstrus or gad-fly in the human skin, an occurrence so common in cattle and the horse, has been noted by several observers in South America, and, among others, by the distinguished naturalist Humboldt and Mr. Howship. In our own country the fact has been recorded by Dr. Duncan in the instance of a young girl who had been tending cattle in Perthshire; and by Dr. Spence, of Shetland, where the phenomenon is far from being uncommon. The patients are persons exposed to the air in grazing districts, and who often lie down to sleep upon the ground. The sting of the insect is generally unnoticed by the patient; and it is not until after the expiration of some weeks that the first symptom is perceived. This symptom is a burning pain at some point in the skin, attended with the elevation of a small hard knot; in a day or two the pain and the knot change their place, and a bluish line is discernible, marking the interval of the two points; sometimes other changes of position occur, or the little knot travels for a considerable distance along the skin. The skin covering the knot is unaltered in appearance, but after awhile a small pinhole is discovered over the convexity of the knot; and some irritation is created, which leads to the skin being pinched and pressed; and if the opening be sufficiently large, the larva of the œstrus, the bot, may be squeezed out. Left to itself, the ter the first symptoms are and the skin, after exf ural state, without leav especially when the epide burn, suppuration and so and the burn rarely gets

accompanying vesicated thematous kind; the sho and the chances of intern the danger is increased as excitable and delicate. We who, standing before the fir chest with a jet of boiling w The inflamed spot was little was raised into blisters. seized with convulsions from hours was dead.

ustio gangrænosa, comprises of Dupuytren; the third deg ayer of the derma is alone d destruction of the entire thickn is distinguished by the pres sh-white, yellowish, or brown on of the papillary layer of patches are filled with a brown while those on the erythemato If the discolored patches be li insensible, but if they be pressed w below the pain is considerab

. it a cicatrix, which is white from the loss of the vascu-
he skin, and more or less fibrous and areolated, accord-
pth to which the burn had extended.
th degree of burn the heat is prolonged, until the whole
the skin is burnt through; at first, the surface is dried
it of the burning body, and the process of drying is con-
the skin itself becomes inflammable, and burns in the
applied to it. The pain is excessive while the burning
oon as it is over, there is a cessation of pain, on account
destruction of vitality of the injured part. The eschar
, or blackish and yellowish in color, hard, dry, and in-
l being shrunk by the heat, draws the skin around it into
folds, the latter presenting the erythematous and vesi-
of burn. In scald the eschar is soft, pulpy, and gray.
d of three or four days the process of separation of the
ences, being ushered in by severe and acute pains, and
rance of a broad erythematous band around the eschar.
s loosened by an abundant suppuration, and at the end of
to twenty days is thrown off, leaving a deep ulcer, which
ickly by granulation. The cicatrix which follows the
e ulcer is indelible, and often a cause of considerable
n account of the contraction which ensues and the adhe-
accidentally drawn together. It is well remarked by
hat this contraction rarely takes place on the dorsal side
of the body and limbs, in consequence of the constant
l action of the flexor muscles. In the neck, arms, hands,
less uncommon.
nd *sixth degrees* of burn are simply more complete than
g, involving a greater depth of tissues in destruction.
ither from a longer continuance or from a higher degree
the latter case the effects may be so rapid as hardly to
. Roche, Sanson, and Begin, report the case of a
ho, having placed his foot in a gutter through which
was about to flow, was overtaken by the stream of
d on withdrawing his limb, found his foot and the
the leg gone, without having experienced any sensa-

tional symptoms of gangrenous burn differ from those
the erythematous and vesicated burn, chiefly by the
tain secondary phenomena, which accompany the sepa-
ination of the dead portions of the skin. Thus, in a
to consider two groups of symptoms, primary and
primary symptoms being those which result from the
onstitution; the secondary symptoms those which are
e reparation of the injury.
symptoms are, cerebral, spinal, and sympathetic irri-
on of the cerebral, thoracic, and abdominal organs,
morrhagic effusions.
te agent in the excitation of the brain and spinal cord
pain is sometimes so great as to destroy life at once,

VESICATED BURN, *ambustio vesicul*
of Dupuytren, is indicated by the deve
uritis, on the inflamed and erythemat
times appear immediately, but more f
few hours; they vary in size, and are
occasionally, a part of the epiderm
burn, and then the local action is m
ration. The inflamed skin is perv
smarting pain; and as it becomes
sense of tension. When the vesi
excoriated derma is acutely sen
with a gelatinous and whitish fi
to protect it. Sometimes, after
swelling, and redness subside
epidermis, returns to its n
behind; at other times, and
removed at the time of the
ficial ulceration are set u
leaving a cicatrix.

The *constitutional sym*
severe than those of t
vous system being gre
more probable; more
the accident may be
the case of a youn
hands, was struck
spout of a tea-k
crown-piece; th
afterwards the
irritation, and

GANGREN
fourth degr
in which t
fourth deg
The *th*
more pa
resentin
vesicles
or sang
burn a
they a
so as
atten
other
sensi
for
whi
and
livi

temperament. Du-
the nervous system
system are exhausted
these cases as instances
s. the pain, by exciting
cause an immediate and
e internal organs of the
entary canal, with its cavi-
with in persons who have
although living at the mo-
the brain, heart, lungs, and
ed with blood, extravasation
y in the mucous membrane,
tion into the cavities of the
kind of congestion is termed
me of the injury, and to dis-
ch are the consequence of reac-
ect of violent congestion of the
at organ, and cause immediate

of any extent, we have to deal
sem, which may, as we have said,
ent and violent stimulation of the
serious congestion of all the organs
we may find extreme prostration of
d skin and extremities, small quick
e other case we may have excessive
essness, sleeplessness, convulsions.
both, congestion of internal organs
edily fatal, or may give way to more
a reaction, in the other calm and sleep.
burn, or those which belong to the
accompany the development of inflam-
e removal of the injured parts, and the
ollows the suppurative process. Ac-
are four epochs of danger in the course
of irritation; secondly, that of inflam-
ration; and fourthly, that of exhaustion.
ay be so severe as to give rise to a state of
is a frequent and full pulse, the skin is
red and dry; there is thirst, nausea, and
on of gastro-intestinal irritation, frequent-
and pulmonary congestion. The limits
to the ninth day. After suppuration is
lesions may result from the absorption of
this period the internal congestions which
may undergo further morbid changes, and
ration of the duodenum, destruction of tis-
consequences; while the period of exhaus-
ed drain on the powers of the constitution.

is also a stage of considerable danger and anxiety. Besides all these unfavorable conditions, the patient may be the subject of erysipelas, or phlegmonous erysipelas, at any period of the progress of the injury.

Mr. Grantham, has published a remarkable case of burn, in which several of the points of difficulty and danger here laid down are illustrated.[1] The patient was a boy, seventeen years of age, who was burned by fireworks exploding in his pockets; the burn occupied nearly the whole of the trunk of the body, destroying the entire thickness of the skin, and offered an extent of six hundred superficial inches, equal to four feet, twenty-four inches of surface; and was a quarter of an inch in depth. The *period of depression* lasted forty-eight hours, being marked by coma, a rapid fluttering pulse, and coldness of surface: and *reaction* was accompanied by an excitable state of the brain, a pulse ranging between 150 and 200 beats in the minute, and an irritable stomach, that refused to contain fluids of any kind. This state continued for four days, and was succeeded for twenty-five days by a low form of fever. The fever then abated, and he improved gradually until the seventh month, when he was attacked with bronchitis, accompanied with sanguineous expectoration. At the end of eighteen months he was able to walk a short distance, and then had a violent attack of erysipelas, and was not finally cured until nearly five years after the accident.

The treatment pursued during the *period of depression* was opium, brandy, beef-tea with arrowroot, artificial heat by means of hot bottles to restore the warmth of the body, and the application of spirits of turpentine to the edges of the burn. During the period of *reaction*, while the stomach was so irritable as to reject all fluids, beef-tea was exhibited in the form of enema; and shortly afterwards, bicarbonate of soda and compound spirits of ammonia were given, in drachm doses, by the mouth, as the stomach would bear them. During the continuance of the typhoid fever he was nourished with beef-tea, mutton broth, and port wine; and as the typhoid symptoms abated, was plentifully supplied with milk, taking on an average six pints in the twenty-four hours.

The local treatment consisted in the use of linseed poultices with yeast; dusting the separating parts with powdered bark and chalk; and when the typhoid fever had abated, dressing the ulcers with spermaceti spread on lint, covering the lint with cotton wool, and then applying a roller.

The attack of erysipelas, which occurred at the eighteenth month, had the effect of enlarging the dimensions of the ulcer from forty-five to one hundred and fifty inches; recourse was again had to opium in small doses, and nitric acid; and after the subsidence of the erysipelas, the healing progressed with rapidity. By the end of the second year, the ulcer was reduced in size to twelve inches; and by the end of the third year, to one inch; it now remained "in a passive state for the space of a year and a half" before it finally healed.

---

[1] Facts and Observations in Medicine and Surgery: the gleanings of ten years of active general practice, &c. Churchill. 1844.

During the whole process, Grantham remarks that there was a greater or less "tendency to congestion of the brain," which was relieved by small general bleedings, occasional saline aperients, and strict attention to diet, especially in reference to the use of stimulants, which never appeared to be indicated."

Of the *cause* and *diagnosis* of burn nothing need be said more than has been already related. The *prognosis* of burn is a question, into the answer to which a number of considerations enter, namely, extent, both in breadth and depth; seat, whether upon the trunk of the body, the face, neck, or limbs; age of the patient, his constitution and temperament; and the nature of the agent causing the burn, whether fluid or solid, whether limpid or dense; whether of a moderate or excessive degree of temperature; whether in the form of steam or flame; whether combined with mephitic vapors; and whether instantaneous in its application to the skin, such as lightning, the explosion of gas or gunpowder, or prolonged. Again, the question of prognosis not only involves the consideration of the primary and secondary dangers attendant on burn, but also, if the prognosis be favorable, the nature of the cure; burns of the first, second, and third degree produce no deformity, but burns of the fourth degree are often followed by considerable deformity, from the contraction of the surrounding skin, which ensues during healing, and the adhesion of parts, during the granulating period, that ought to be kept separate. Thus, in burns of the neck, the chin is liable to be drawn towards the chest or to one or other shoulder; and in burns of the hands and feet, the fingers and toes may be drawn out of their proper axis, and the joints dislocated. Again, there is the deformity which sometimes results from hypertrophy of the white fibrous tissue producing kelis traumatica. All things considered, therefore, the prognosis of burns is uncertain.

TREATMENT.—The management of burns and scalds presents two indications for immediate attention: firstly, to relieve pain, calm the nervous system, and restore the circulation to its normal standard; secondly, by local applications, to supply a covering of defence, which shall be soothing and agreeable to the injured part.

The first of these indications is to be accomplished by means of opium conjoined with warm brandy-and-water, the dose to be proportioned to the severity of the suffering, and its repetition regulated by the continuance of the symptoms. The opiate to be preferred is the liquor opii sedativus, of which the dose may be fifteen minims; or in the absence of the sedative solution of opium, the tinctura camphoræ composita, two drachms; or tinctura opii, half a drachm. The sedative may be repeated at the end of two or three hours, if necessary; and the brandy-and-water as often as may be requisite; bearing in mind that the stage of depression will, if the patient survive, be followed by a stage of reaction, when an opposite method of treatment will be required.

The best local application, where the cuticle is unbroken, is flour, which possesses the additional advantage of being always at hand; it should be thickly dusted over the burnt or scalded part by means of dredger; a layer of wadding or cotton wool should be placed first, and then a bandage, lightly but firmly applied to prevent friction. Another popular and admirable dressing is a paste of common whiting of the consistence of a thick cream, and applied with a soft brush. The purpose of the local applications is threefold; namely, to cool the heated skin; to exclude the atmospheric air, which is always an irritant to an inflamed surface; and to preserve the part in a state of repose and defend it from pressure. Hence all meddling is objectionable, and the part once secured should not be disturbed, even although the pain increase after the dressing has been applied.

When blisters are formed they may be pricked with the point of a needle, to prevent them from bursting and causing excoriations; and where excoriations exist, the latter may be covered with a liniment of olive and white of egg (pars 1 ad 2), or with the benzoated ointment of oxide of zinc. It sometimes happens, that when the flour has been on for some time, and particularly where there has been any serous effusion from the vesicles, that the flour cakes, and becomes hard and uncomfortable to the skin. In this case the surface, and particularly the crevices of the dried crust, should be moistened with the liniment mentioned above; or with a liniment of lime-water and olive oil; or lime-water and linseed oil (equal parts), and the whole covered with a lint, spread with the benzoated ointment of oxide of zinc, and afterwards some cotton wool, and a light bandage.

In the third and fourth degree of burn, where a portion of the skin has been killed by the heat, and the cutis is excoriated to a greater or less extent, while, in the circumference, the injured part presents the erythematous and vesicated forms of the injury, the denuded part may be pencilled with either of the liniments already mentioned, while the circumference is dredged with flour. Then the denuded part should be covered with lint spread with zinc ointment. Sometimes, with the idea of bringing back the vitality of the part killed by the heat, or of preventing parts which were merely weakened, from falling into the state of gangrene, the stimulant properties of turpentine are added to the remedy. This may be effected by rubbing down a little common turpentine with either of the above liniments; or the part may be dressed with the unguentum elemi, after the application of the simple liniment to the skin. It was upon this principle that Grantham, in the case above narrated, bathed the edges of the injured part with spirits of turpentine.

Whenever a burn or scald has been received on a covered part of the body, the clothes should be removed, and with extreme care, lest the cuticle be rubbed off, and the part excoriated; and the burn being completely exposed to view, the flour dredger should be immediately brought into play. It has been recommended, immediately when a burn occurs, that the part should be plunged in cold water, and kept there until the burning pain has subsided; this, however, can only be done where a part of a limb is concerned; and there can be no objection to it as a preparation for the flour application. In burns or scalds of small extent, a poultice of the pulp of raw potatoes, or a poultice of soap, are favorite popular remedies, and perfectly innocent; but are neither so pleasant nor so convenient as the flour dredging. Again, when the shock to the system has produced a chilled state of the surface, the moist and cold applications would be objectionable, as tending to aggravate that state. Fabricius and Sennertus used the pulp of raw onions, in combination with oil, soap, and salt; or oil, white of egg, and salt, when the skin was unbroken, but omitted the onion and the salt where the surface was vesicated. A liniment composed of the whites of two eggs, two ounces of olive oil, and one of rose-water, was esteemed a great secret in the time of Ferrarius; it was applied by means of a piece of linen rag; the rag being left on the skin, and saturated twice or thrice a day with the liniment. The green parts of the elder were also much used, made into an ointment with fresh butter.

In illustration of the principle of securing an impermeable covering to the burn, and leaving it undisturbed, a principle which we advocate in the treatment of eczema, we may mention the experience of a house-surgeon of a London hospital, emulous of distinguishing himself during his week of service. We met him one day at the corner of a street, when he said, "I never left the hospital for an entire week, and got nothing but a cut finger and six burns. The burns all died, with the exception of one, and he was the worst; he had tumbled into a vat of boiling soap. When he came to the hospital he was covered with the soap, which had congealed on the skin, and we could not remove it without bringing off the skin at the same time. We could do nothing for him, so we left him alone; and he lived." This brief commentary on a week's idleness contains volumes for reflection and thought. The poor man who fell into the soap-maker's vat found the wound and the antidote at the same moment, he came out surgically dressed; the injury was immediately sealed up by the hardening soap, the air was instantaneously excluded; and although badly scalded, and having one of the most dangerous of burns, that of a large surface, the whole surface of his body in fact, he lived. Accident has given us here a lesson, an example, for imitation.

In burns of the third and fourth degree, where we look for inflammatory reaction and subsequent suppuration for the removal of an eschar or slough, inflammation may sometimes run too high; and we may find it necessary to subdue the inflammatory action by means of evaporating lotions, which may be applied externally to the immediate dressing. On the other hand, it happens most frequently that gentle stimulation is necessary, to quicken the flagging powers of the skin, and hasten suppuration, and the separation of the dead parts. In the latter case we find an useful auxiliary in lotions of the chloride of lime (ʒj ad ℥viij); in the elemi ointment, or in the yellow basilicon, the unguentum resinæ. Daniel Turner remarks, in reference to the manipulation of burns, that, "at this, if at any time, the lady's hand is required;" and, in reference to the class of burns now under consideration, he observes, "I seldom found occasion to use other than my unguentum de lapide calaminare from first to last, which is anodyne, digests, incarns, and cicatriseth to admiration;"

he further lauds the uses of the oxide of zinc, under the magnificent name of *Diapompholigos.*

After the period of depression, which may last for twenty-four or forty-eight hours, is past, and reaction is established, we may have to treat constitutionally those conditions of the general system which accompany inflammation and congestion of internal organs. We must have recourse to mild aperients, effervescent salines, and an antiphlogistic regimen; we may be required to abstract blood generally and locally, and contend with the various congestions as they show themselves. In Grantham's case, it will be seen that he had to combat in succession, typhus fever, bronchitis with sanguineous expectoration, erysipelas, and symptoms of congestion of the brain. In the suppurative stage of the injury, where the powers of the constitution are exhausted by a long-continued drain, it will be found necessary to have recourse to a generous diet and tonics.

Hebra has suggested for the treatment of burns and scalds, as also for certain eruptions of the skin, a perpetual warm bath; and deposited at the International Exhibition of 1862 his apparatus for that purpose. He mentions the case of a washerwoman, aged thirty-eight, "extensively burnt all over the body, *dermatitis ambustionis escharotica,*" who was kept in the bath "during twenty-one days, or 504 hours, without interruption, and left it perfectly healed of her sores." And another, of a man twenty years old, who had received a severe burn of his lower limbs from falling into a lime-oven; he was placed in the bath apparatus, and left there for twenty-eight days, or 672 hours, until the sores were perfectly healed; the burn in this case had destroyed the vitality of the skin completely, and it fell away from the parts beneath in charred masses. He also gives the case of a boy suffering under chronic pemphigus, who "was kept for 100 days, or 2400 hours, in the warm bath apparatus, and left it only when all symptoms of the disease had disappeared." On a relapse taking place some months afterwards, the boy was again placed in the bath at his own repeatedly expressed desire.

Hebra's bath apparatus is a box 6 feet long by 3 wide, made of wood, and lined with copper or zinc. Inside the box is an iron frame or stretcher, and upon the stretcher is placed the bed, covered with a blanket, and furnished with a horse-hair bolster; while, at two feet distance from the head of the bed, is a back support, moving on a hinge, and admitting of being fixed, by means of a simple piece of rack-work, at any angle that may be agreeable to the patient; moreover, at each extremity, the bed is suspended by two bands, which work upon rollers attached to the margin of the box, and enable the attendant to raise or depress the bed, and so alter the position of the patient without otherwise moving him. The supply of water to the bath is obtained from a copper boiler placed above the level of the bed, and near its head; the water flowing into the bath enters at the bottom, and the escape pipe leaves it at the water level; "the stream is kept constantly running, and thus all impurities are rapidly washed away from the surface." If it be desired to keep the face continually

cent; but are neither so pleasant nor so convenien
ing. Again, when the shock to the system has
state of the surface, the moist and cold applica
tionable, as tending to aggravate that state.
tus used the pulp of raw onions, in combina
salt; or oil, white of egg, and salt, when the
omitted the onion and the salt where the
liniment composed of the whites of two eg
and one of rose-water, was esteemed a
Ferrarius; it was applied by means of a
being left on the skin, and saturated
liniment. The green parts of the eld
into an ointment with fresh butter.

In illustration of the principle of
ing to the burn, and leaving it un
advocate in the treatment of eczem
of a house-surgeon of a London
himself during his week of ser
corner of a street, when he sa
entire week, and got nothing
burns all died, with the excep
had tumbled into a vat of bo
pital he was covered with th
and we could not remove it
time. We could do noth
lived." This brief comme
for reflection and thoug
maker's vat found the
he came out surgical
up by the hardening
and although badly
of burns, that of a
fact, he lived. Acc
imitation.

In burns of the
matory reaction
eschar or slough
may find it nec
of evaporating
immediate di
that gentle
of the ski
parts. I
chloride
yellow
referen
the la
now n
use o
whic

ive judgment
keep the tempera-
ient, "although there
in sleeping, may run
periments heretofore tried,
ension of such a danger.

lain; kibe.

for a long time to the surface of
nstitution, produces local insensi-
of actual freezing of the affected
refore upon the nerves of the body,
which are the most distant from
ulation, namely, the feet, the hands,
the surface of the body, extending
more central organs. With the
chilled part, there is diminished or
leness and contraction or diminution
motion, or stiffness. The arrest of
motion are, however, consecutive to
sation.

very degree of severity, from the mere
ment of the surface of the skin, constitut-
ng and death of a part of the body. In
pension of vitality, in the other a state
the chill is progressive or persistent
of gelatio are those already indicated.
ility, paleness, reduced size, and immo-
perature undergoes a degree of elevation,
which occasions a thaw, then a new series
by the congelated part, phenomena which
warm *reaction.* Sensation returns, but the
nd: a teasing itching, where the chill is
ingling, or severe and acute pains, where
per nerves. Circulation also returns; the
and hot, in the first stage of reaction, blue
: in other words, a state of inflammation of

of the previously pale and

or long continued as to
the insensibility, the cold-
the living tissues alone take on
the redness, the heat, the swell-
the skin terminates by an abrupt
of demarcation as it is termed in
which result in the separation of
take place. The dead part remains con-
comes dry and dark colored, finally black;
off, if it be superficial, or drops off, if it be

eral effects of cold upon the living body, we
attention to those slighter degrees of chill so com-
some amongst children and adults of weakly powers
circulation, during the winter season; those minor
go by the names of perniones, chilblains, and kibes.
like burns, admit of division into three groups, which
many degrees of severity of the affection: they are, the
chilblain; *vesicated* chilblain; and *gangrenous* chilblain.

RYTHEMATOUS CHILBLAIN, *erythema a gelu*, originating in a
degree of cold applied to the skin, is not discoverable until
of reaction is commenced. A child may have been exposed
cold during the day, and in the evening returns to a warm room,
a seat near the fire. Then, for the first time, the chilblain declares
presence, generally on the feet, on the heels or on the toes, or on
the hands, by itching and tingling; and if the part be examined, it is found to be red and swollen. The itching is incessant and tormenting, and continues until sleep overtakes the little sufferer. In the morning, or after a few days, the chilblain has a bluish and livid appearance, resulting from the establishment of a permanent congestion of the part, dilatation of the capillaries, and retardation of the circulation; the retarded circulation allowing time for the change in the blood from its arterial to its venous character. In this way and under this form the chilblain may be perpetuated during the continuance of the cold weather, fresh chilblains appearing from time to time, giving rise to swelling and tenderness of the feet, which prevent the child from walking without pain, and exciting fresh attacks of itching every time an alternation of temperature from cold to warm occurs. As already observed, chilblains may seize upon the lobes of the ears, upon the ears themselves, and also upon the nose, or the more prominent parts of the face.

The VESICATED CHILBLAIN, or broken chilblain, is either an aggravation of the preceding, or the result of a more severe degree of cold. During the continuance of the cold it may be accompanied with a greater or less degree of numbness; and on the change to a more elevated temperature, the pruritus, the swelling, and the congestion are more considerable. The vesicated chilblain, moreover, has a purplish, livid tint, and the cuticle gradually separates by effusion beneath it, and forms a vesicle or bulla of variable extent. The contents of the vesicle are a sanguinolent serum, and the surface which is exposed on its bursting is either livid or variously mottled with red, blue, or gray, the gray portion indicating the commencement of gangrene and a consequent slough. Besides heat, tingling, and itching, the vesicated chilblain is attended with considerable pain, it ulcerates to a greater or less extent, and prevents the child from walking. Although not dangerous, broken chilblains are very painful and troublesome, often lasting the greater part of the cold weather.

The GANGRENOUS CHILBLAIN is rather a frostbite than a mere chill of the surface of the skin, like the true chilblain. The vitality of the affected part is destroyed by the cold, and a state of gangrene, followed by the separation of a slough, ensues. The two former degrees of chill are unaccompanied by constitutional symptoms; but the frostbite or gangrenous chilblain is often associated with symptoms of general prostration and congestion of the vital organs, particularly of the brain, and sometimes terminates fatally.

TREATMENT.—The treatment of gelatio and chilblain is intended to restore the innervation and circulation of the part, and to effect this restoration gradually. If reaction occur rapidly, and an active circulation be set up in the tissues lowered in their vitality by the effects of cold, inflammation, and probably death of the chilled structures will ensue; the object of treatment is, therefore to bring about a return of sensibility and circulation in the slowest manner possible. To this end the patient should be placed in a cool room, and frictions made on the part with the hand. If the part be frozen, snow or cold water may be rubbed upon it, to thaw the frozen tissues by degrees; then the hand alone may be used, with a little starch powder, to prevent attrition, and guard against the too great heat of friction; then some mildly stimulating liniment may be used; and, finally, the part may be enveloped in cotton-wool or flannel.

With a common erythematous chilblain, all these precautions are unnecessary, but the general principle of management should be the same. Frictions with starch powder, frictions with mild liniments, then the use of strong stimulants; and all with the view of bringing back the normal circulation of the part, and restoring its tone, avoiding always, and as much as possible, approach to the fire. One of the most useful remedies for the above purpose is a liniment composed of the white and yelk of two eggs, two ounces of spirits of turpentine, and two ounces of distilled vinegar, well shaken together. This liniment may be lowered in strength, if thought desirable, by more vinegar; or it may be increased in power and made more anodyne by the addition of laudanum, camphor, or chloroform; or it may be rendered more stimulating by the addition of cajeput or ammonia. If turpentine be objected to, a liniment of camphor, ammonia, and laudanum (two parts of camphor liniment to one of liquor ammoniæ and one of laudanum) may be preferred. Sir Henry Halford was wont to prescribe soap liniment with tinctura lyttæ, six parts of the former to one of the latter; a remedy originally advised by Mr. War-drop.[1] Dr. Turnbull recommended a concentrated tincture of cayenne pepper to be rubbed on the chilblain by means of a sponge, until tingling and a feeling of electricity were occasioned in the part. Rayer suggests a strong solution (ʒj ad ℥xvj) of alum; and Dr. Balfour of the Royal Military Asylum at Chelsea, uses, amongst the numerous boys under his care, a mixture of equal parts of compound tincture of iodine and liquor ammoniæ, which he causes to be painted on the chilblains twice in the day.

The vesicated and ulcerated chilblain are to be treated, according to their state of activity or indolence, with the water dressing applied by means of Alison's impermeable lamb-skin; the benzoated ointment of oxide of zinc; the calamine ointment; or some more stimulating remedy, such as an ointment of Peruvian balsam (ʒj ad ℥j), the unguentum elemi, or resinæ. In the broken state of chilblains, Dr. Balfour prescribes, with great success, an ointment composed of equal parts of unguentum resinæ and spirits of turpentine.

The gangrenous chilblain and frostbite are to be treated, after the restoration of circulation in the sound parts, in the same manner as sloughing and gangrene resulting from burns.

CHAPTER XXVII.

HISTORY AND DESCRIPTION OF THE ITCH-ANIMALCULE, AND ENTOZOON FOLLICULORUM.

ACARUS SCABIEI.

Syn. ***Acarus siro, acarus exulcerans,*** **Linnæus ;** ***sarcoptes hominis,*** **Latreille ;** ***acaridion,*** **Aristotle ;** ***syro, sciro, siro, sirones, pedicellus,*** **Rom. ;** ***pedicello, pedicellus,*** **Ital. ;** ***scirro,*** **Turin ;** ***ciron, brigant,*** **Gascon ;** ***oçao, ouçou, ouçam,*** **Portug. ;** ***seuren, reitliesen,*** **Germ. ;** ***scaborm, kridorm,*** **Dan. ;** ***klamask,*** **Swed. ;** ***okok,*** **Grœnland ;** ***assoalat, assoab,*** **Arab. ;** ***wheale-worm.***

A POPULAR knowledge of the existence of the itch-animalcule is probably coeval with the first development of scabies in the human race, since we find that the earliest writers mention it as possessing a popular synonym. Our dictionaries afford us similar information, and most observers have noticed the fact that a living creature is commonly extracted from the bodies of those affected, by members of their own class, and by fellow-sufferers.

The earliest scientific information relative to the itch-animalcule that we find recorded, dates as far back as the time of Aristotle, 350 years before the Christian era. For we are informed by Moufet, in the commencement of his chapter, "De syronibus, acaris, tineisque animalium," that **Aristotle** was acquainted with these syrones, a statement which he precedes by a reproof to Thomas a Veiga for making an assertion to the contrary. For, says he, "Syronem antiquitate ignotum fuisse Tho. a Veiga falsò memorat, nam ipsum ἀκαρίδιον Aristoteles vocat." (5 Histor. Animal., cap. 32.)

---

[1] "Of the treatment of chilblains;" in a paper entitled "An Account of some Diseases of the Toes and Fingers," published in the fifth volume of the Medico-Chirurgical Transactions for 1814.

That the itch-animalcule was well known to the **Greeks** may also be inferred from the names *siro* and *acarus* by which it is designated, for, according to Moufet, both of these terms are derived from the Greek language. "Syrones item dici videntur, ἀπὸ τοῦ σύρδην ἕρπειν, quia *tractim sub cute repunt.*" And again he observes, "τὸ γὰρ ἀκαρὶς, teste Polluce et Suida, exiguum illum dicitur, quoad ab exiguitate non possumus κεῖραι, id est, dividere."

The **Arabians** were also acquainted with the animalcule at an early period, for we find **Abinzoar**, in the twelfth century, thus speaking of them: "Syrones *Assoalat* et *Assoab* dicti, sunt pedicelli subter manuum crurumque et pedum cutem serpentes et pustulas ibidem excitantes aquâ plenas: tam parva animalcula, ut vix visu perspicaci discerni valeant."[1] But Moufet expressly tells us that Abinzoar is the only one amongst the ancient authors who shows any knowledge of scabies and of the proper method of treating it, "Horum nullus antiquorum meminit præter Abinzoar qui morbum hunc vidit et curationem ejus recte instituit."

The **Romans** named the itch-animalcule *pedicellus;* and from several quotations made by Moufet, we learn that the Roman physicians were well acquainted with it.

Scaliger, in his letter to Cardanus in 1557, remarks that the acarus is globular in form, and so minute as to be scarcely perceptible. The Turinians, he observes, call it *scirro;* the Paduans, *pedicello;* and the Gascons, *brigant.* The little creature lives in canals which it burrows in the epidermis, and when taken out and placed upon the nail, exhibits a certain degree of movement, which is much increased by the warmth of the sun. When crushed between the nails, a slight noise is heard, and a small quantity of watery fluid is perceived.[2]

Gabucinus observes, "Ad nostra tempora quoddam supplicii genus indomita fœditate pervenit; in manibus exilis quidam pedicellus, lente minor, sub cute serpit."

Ingrassias, after referring to the statement of Abinzoar, observes, "Excoriata cute ubi minimus ille jonthus varulusve, cujusdam sudaminis instar apparet, exeunt animalcula viva, tam parvuncula ut vix possint videri."

Jobertus very aptly compares them with moles, but unfortunately invalidates his testimony by supposing them to be the hidden cause of trichonosis tonsurans, for, says he, "nascuntur sæpe in capite et pilorum radices exedunt, quos Græci τριχοβρῶτους, τριχοτρώκτας, σῆτας, τριχοβόρους, tineas peculiari nomine appellant."

Aldrovandus, also, in 1596, draws attention to the minute size of the *pedicello* or *sciro*, its resort in burrows beneath the epidermis, and its excitation of vesicles. He remarks that we need sharp eyes and a good light in order to perceive it.

---

[1] Moufet, Theatrum Insectorum, p. 266.

[2] Exercitatio 194; de Subtilibus; num. 7, 1557.

MOUFET, in the famous work already referred to, the "Theatrum Insectorum," published in 1634, by Sir Theodore Mayerne, after the death of its author, but commenced during the preceding century by Wotton, Gessner, and Penn, gives the first account of the itch-animalcule published by an English writer. In this volume we find recorded a very complete description of the creature, and the most important facts with regard to its habits are accurately noted. In reference to their size and form, he observes, "Syronibus nulla expressa forma (ut recte Scaliger notavit) preterquam globi: vix oculis capitur magnitudo tam pusilla, ut non atomis constare ipsum, sed unum esse ex atomis Epicurus dixerit." In another place he remarks, "Animalculum est omnium minutissimum;" its color, "est albicante, capite excepto; propius intuenti nigricat, vel nigro parum rubet;" and it moves briskly when liberated from confinement, and stimulated by light and warmth. "Extractus acu et super ungue positus, movet se, si solis etiam calore adjuvetur." He remarks upon the burrowing habits of the creature, and the situation in which it is usually found, "Ita sub cute habitat, ut *actis cuniculis* pruritum maximum loco ingeneret;" and again, "Mirum est quomodo tam pusilla bestiola nullis quasi pedibus incedens, tam longos sub cuticulâ sulcos peragat. Hŏc obiter est observandum, syrones istos non in ipsis pustulis sed prope habitare." He, moreover, rebuts the notion of their being allied to pediculi, and defends Aristotle against such an insinuation. "Neque syrones isti sunt de pediculorum genere ut Johannes Langius ex Aristotele videtur asserere: nam illi extra cutem vivunt, hi vero non: neque revera Aristoteles ullo quod sciam scripto inter pediculos acaros numeravit." His inference respecting their origin, drawn from their habitation, savors rather of the times than of the truth. "Illorum quippe proprium est non longe residere ab humore aqueo in vesiculâ vel pustulâ collecto: quo absumpto, vel exsiccato, brevi omnes intereunt. Unde colligimus, quemadmodum ex sero putrefacto exoriantur, sic eodem vicissim sustentantur." Moufet falls into the pardonable error, since repeated by several modern authors, especially by Linnæus, of confounding the acarus scabiei with the acarus domesticus. Thus, he remarks, that the syrones are produced in decayed cheese and wax, and when found in these substances, as well as in leaves and dried wood, they are termed *mites* "sed in homine *wheale wormes* dicuntur, et Germanice, *Seuren*."

In the year 1654, AUGUSTUS HAUPTMANN, a German physician, published a work on baths,[1] in which he speaks of the acari or sirones which he found in persons affected with scabies. These, he says, are in German called "reitliesen;" they have six legs, and in appearance resemble the mites of old cheese. To Hauptmann belongs the credit of giving the first figure of the animalcule; which is referred to by Bonanni, both in his own work and in his edition of Kircherius, in the following terms: "Monstrosam eorum figuram cum permultis et oblongis post tergum caudis depinget."

---

[1] Uhralten Wolkensteinischen Warmen Bad und Wasser schatze, 8vo., Dresden.

Haffenreffer, in 1660, also a German physician, alludes to the acarus as a species of pediculus of very minute size, breeding between the epidermis and the derma.[1]

In 1682, a short notice of the animalcule, attributed to Etmuller, is given in the first volume of the "Acta Eruditorum Lipsiæ."[2] In this account, reference is made to Scaliger's observation of its globular form, and to the opinion entertained by Rohault[3] of its back being covered with scales: "Dorsum sit squammosum seu squamis coopertum." The author gives the following description of them: "Colore sunt albicante et pedibus exceptis, qui propius intuenti nigricare videntur, pedibus sex instructi sunt, binis utrinque mox juxta caput positis, quibus talparum ritu canaliculos sub cuticula agere, ut oblongos non raro, quasi sulcos, trahere, simulque molestissimum pruritum excitare videntur." The paper is illustrated with three figures, drawn with an object-glass of low power; they are somewhat coarsely executed, but afford a tolerably fair representation of the general characters of the animalcule.

During the following year, namely, in 1683, Giovanni Cosim-Bonomo[4] published his letter to Redi,[5] which was translated into Latin by Lanzoni,[6] in 1692. An abstract of this letter was read before the Royal Society by Dr. Mead, and published in the Philosophical Transactions[7] for 1702. Bonomo or Cestoni gives a more perfect account of the acarus scabiei than had hitherto existed. His attention was first drawn to the subject by meeting with the popular name of the itch-animalcule in his *Vocabulario dell' Academia della Crusca* (A. D. 1612), followed by the accompanying explanation: "*Pellicello e un piccolissimo Bacolino, il quale si genera a rognosi in pelle e rodendo cagiona un' acutissimo pizzicore.*" He then betook himself to researches with the view of determining the truth of this definition, in which he was aided by his friend Hyacintho Cestonio, who informed him that he had seen "mulierculas propriis e scabiosis filiolis acûs extremitate, nescio quid educere, quod in læve manûs pollicis ungue, alterius manûs pollicis ungue compressum, in ipsa compressione aliquem parvum sonum facere videtur, hoc autem educi a minutioribus tuberculis scabiosis, perfecta nondum sanie scatentibus, vel ut vocitant immaturis; mutua quod itidem charitate inter remiges et mancipia Balnei Liburnensis, si scabies infestaret fieri, adnotavit." Having obtained one of the animalcules, he examined it with the microscope, and "found it to be a very minute living creature, in shape resembling a tortoise, of a whitish color, a little dark upon the back, with some thin and long hairs, of nimble motion, with six feet, a sharp head, with two little horns at the end of the snout."[1]

---

[1] Nosodochium cutis affectûs. Ulmæ, 1660.

[2] For September, 1682, p. 317.

[3] Tract. Physic. par. i. cap. 21, 1798.

[4] We are not clear as to whether Bonomo is a name assumed by Cestoni; or whether Cestoni or Hyacintho Cestonio is a co-laborer of the former. At this period of time the question is not very important.

[5] Observazioni intorno, a pelicelli del corpo umano del G. Cos. Bonomo, in una lettera al Fr. Redi.

[6] Observationes circa humani Corporis Teredinem. In Miscell. Natur. Curios. for 1692.

[7] Philosophical Transactions, vol. xxiii. p. 1296, pl. 283, an. 1703.

Bonomo gives two rude figures of the animalcule, which are inferior to those in the "Acta Eruditorum," and must have resulted from the use of a bad microscope. He also delineates its "very small and scarcely visible white egg," and stands alone in this observation. Two remarks in Bonomo's letter are especially deserving of attention: the first is, his comparison of the *siro* with a little bladder of water; and the second, his observation relative to their habitation in vesicles, "immaturis;" both of which are invaluable as aids in seeking for the animalcule.

MORGAGNI, in his 55th Letter, book 4, contributes his evidence to the existence of the itch-animalcule, and records a case in which he saw the creature himself.

In 1691, PHILIP BONANNI, in his "Observationes circa viventia quæ in rebus non viventibus reperiuntur," as well as in his edition of the "Rerum Naturalium," of Kircherius, refers to the opinions of Bochartus, Kircherius, and Borellus. KIRCHERIUS found these minute creatures, "candidi puncti similitudinem," when examined with the microscope, to be "animalia pilosa et prorsus urso similia." BORELLUS, he observes, "histrici similia facit;" but this author, we are inclined to think, describes the acarus domesticus, and not the acarus scabiei; although he was evidently acquainted with the latter, since in his "Historiarum et Observationum Medico-physicarum," under the title of "Ulcera pediculosa,"[2] he records an instance of vesicular affection apparently identical with scabies. Bonanni gives four figures of the animalcule, one from Bonomo's letter, two from the Acta Eruditorum, and one of his own. Concerning the latter he observes, "insectum hexapode, quod motu erat pigrum, colore livido, et raris setosis villosum."[3] In size it was about equal to a grain of sand; and he concludes his description with the following question: "Unde nam istos animatorum semiatomos erupisse judicabimus?" From the examination of his figure, which is of large size, and exceedingly rude, and from his statement that four of the little animals were sent to him by Baldigianus, a professor of mathematics in Rome, and who had extracted them from the face of one of his scholars, it is quite evident that they are pediculi pubis, and not acari. Bonanni recopies the four figures from Kircherius.[4]

In 1744,[5] BAKER, in a curious work, entitled the "Microscope made easy," for the perusal of a copy of which we are indebted to our kind friend, Professor Grant, remarks, "The microscope has discovered what, without it, could scarcely have been imagined, that the distemper we call the itch is owing to little insects under the cuticula, whose continual bitings cause an oozing of serum from the cutis, and produce those pustules and watery bladders whereby this disease is known."

---

[1] Philosophical Transactions, abridged, vol. v. p. 199.

[2] Obs. 20.

[3] Fig. 114.

[4] Fig. 95.

[5] This is the date of the third edition.

He then quotes the description of the animalcule, and the mode of finding and extracting it, given by Bonomo, and copies the two figures of this author, not forgetting the ovum.

In 1762, CASAL, a Spanish physician, in a work, entitled "Medical Researches on the Asturias," referring to the burrowing and grubbing habits of the acari, remarks, " Vocantur aratores, et merito, arant enim semper inter cuticulam et cutem."

In 1786, WICHMANN, of Hanover, was induced to verify the prevailing opinion of the existence of an animalcule in connection with scabies, and the results of his labors are published in a volume entitled " *Ætiologie der Kraetze*."[1] He found the zoological characters of the animalcule undecided, and the precise species infesting the skin in scabies undetermined. "Thus," he remarks, " of many naturalists, to name only a few of rank, Linnæus has only *tentacula*, Schæffer has *antennæ pediformes articulatæ*, while Baron de Geer expressly says they have no antennæ, but two arms with joints, which resemble those of spiders, which have likewise no antennæ." He alludes also to the opinion of Linnæus, that the acari farinæ might be conveyed, in the powder used in dressing children, to their skins, and there colonized; and he attributes to this error on the part of the great naturalist the assertion made by Professor Murray,[2] " that previous to any appearance of pustules (in scabies), there is always a foulness of the juices, and that when this foulness has got a certain height, the acari of cheese or meal are induced to seek a nidus in the skin." Wichmann refers also to the omission of distinction of species by Pallas,[3] for that author remarks, "Acarus scabiei, acaro farinæ est consanguineus." De Geer, however, distinguishes the two species very accurately, for of the acarus farinæ he observes, " Acarus oblongus albus capite refuscente, pedibus conicis crassioribus æqualibus;" and of the acarus scabiei, "Acarus subrotundus albus, pedibus rufescentibus brevibus; posticis quatuor seta longissima, plantis quatuor anticis fistulatis capitulo terminatis." The author points out the vesicles as the seat of habitation of the animalcule, but he observes, that "even before such a transparent vesicle is formed, we may often discover traces of the insect on the fingers or hands, in a reddish streak or furrow," and " it is even more usual to find the animal in these furrows than in the pustules themselves." The furrows he discovers only on the hands and fingers. Wichmann adds two figures of it, as examined with an object-glass of high power. These are very correct, and give a better idea of the little creature, as seen by that instrument, than any other delineations published. Like his predecessors, he makes no attempt to describe the zoological characters and structure of the animalcule.

In 1788, JOHN HUNTER, in his work entitled, " Observations on the Diseases of the Army in Jamaica, and on the best means of preserving the Health of Europeans in that Climate;" remarks, that "while speaking of the diseases produced by insects, it will not be out of place to mention some singularities respecting the itch, a disease which arises from a particular species of insect (acarus siro). It has been doubted whether this disorder really depends upon an insect, but I have frequently seen them picked out of the skin, and examined them with a microscope. They were first observed by Bonomo, and the figure given by him conveys a tolerable idea of the insects."

---

[1] 8vo., 1786; and London Medical Journal, vol. ix. 1768, p. 28.

[2] De vermibus in Leprâ obvioss. Göttingen, 1769, p. 9.

[3] Dissertatio de infestis viventibus, 1760, p. 2.

In 1805, ADAMS gives two excellent figures of the itch-animalcule in a paper[1] addressed to Sir Joseph Banks, and read before the Royal Society in the month of April of that year. This paper is entitled, "*An Account of the Acarus Siro, Acarus Exulcerans of Linnæus; by some considered as the Itch Insect.*" The figures of the acarus which accompany this paper are superior to any that have been published either before or since, and are sufficient to identify the animalcule completely with the acarus scabiei. The author's observations were made in Madeira, where, it would appear, the creature is extremely common, and is called *oçao, ouçou, ouçam.* Adams advances no zoological description of the animalcule, but confines himself chiefly to the disease engendered by its presence, and to the mode of detecting the oçao. In the latter art he was instructed by an old woman, and he confesses himself to have been a dull scholar; but the results of his researches afford no better information than that contained in the Theatrum Insectorum of Moufet. The principal seat of the animal, says Adams, is a "reddish elevation" at the end of a "somewhat knotty" reddish line, extending from the vesicles for the distance of about a quarter of an inch. The author attributes to the animalcule a "power of leaping with a force not less than a flea. Such was the case with one whilst I was examining it under a convex lens." In this he is entirely mistaken; for the creature is deficient in the organization necessary for such an effort, and its sudden disappearance from the field of his lens is rather to be ascribed to some untoward movement occurring during the adjustment of his optical apparatus. Adams expresses himself unwilling to accord to Bonomo all the credit which that writer claims; and in reference to the discovery of the egg, remarks, "without suspecting the good intention of this writer, you will readily admit the uncertain discrimination of the egg of an insect, described by De Geer as about the size of a nit, but which, on placing it under a microscope by the side of a nit, did not appear more than a fourth part of its bulk. For myself, I never could discover what could satisfactorily be called an egg."

Hitherto Adams has spoken of the oçao as being identical with the itch-animalcule of Bonomo and other writers, but in subsequent paragraphs he declares his belief that the disease engendered by the ouçoes and that of the itch, are perfectly distinct, and he founds this opinion upon the following data:—

1. The disease of ouçoes is attended with considerable febrile disturbance, and sometimes with severe local symptoms.

---

[1] Published in his work on Morbid Poisons, 4to., 1807, p. 293.

2. It is easily cured; by extracting the animalcules, by the white precipitate ointment, or by the use of sulphur internally.

3. It is liable to recur, from the development of undestroyed ova, unless the remedies be continued for a month after the apparent cure; and even then, if the disease be cured in the autumn, it is liable to return in the spring, because the animalcules remain torpid during the winter.

4. It is always attended with vesicles which possess great uniformity, and have each a red line; whereas in itch the vesicles are variable in size.

5. The natives of Maderia entertain a disgust for the itch, which they call *sarna;* whereas the ouçoes give them no discomfort.

6. The dictionaries of all languages are opposed to the similarity of the affections, since they indicate a name for the animalcule distinct from that of the itch.

7. John Hunter could never discover the itch-animalcule.[1]

Now, all these objections, cogent as they may have appeared to the author, must fall to the ground the moment that the animalcule is shown to be present in the itch, and to be the cause of that affection. Nor would it be difficult to prove, seriatim, that each of the objections above cited is unfounded. The figures appended to Adams' papers are so excellent, that we are inclined to assign to them a rank superior to those of Wichmann, although the object of the two authors is widely different, and scarcely admits of comparison; for while the figures of Adams are intended to trace form and general character, in those of Wichmann there is a manifest endeavor to exhibit textures also.

The year 1812 witnessed the performance of a remarkable scene in the memoirs of the acarus scabiei. GALÉS, Pharmacien of Saint Louis, tempted by a prize offered by an unbeliever in the existence of the animalcule, introduced the gentle stranger to the wondering gaze of the *notabilities* of Paris. The Academy applauded, the crowns were paid, and the pencil of the artist of the Musée Royale was called to perpetuate the juggle. He has recorded the figure of the common meal mite! (acarus farinæ.) It is needless to say, that the statements put forth by Galés were, from beginning to end, a tissue of deceptions, and to have written such stuff as that contained in his paper is the best proof that he never could have seen the animalcule. M. Patrix played pantaloon to Galés's clown.

The discovery of the treachery of Galés was not, however, made for a certain number of years, when, with some difficulty, Raspail succeeded in proving the identity of the insect of Galés with the acarus farinæ. The consequence of the exposure was universal distrust, and in this state the question remained, until a young student from Corsica, RENUCCI, in the year 1834, exhibited the veritable animalcule in the clinical theatre of Alibert, and demonstrated the method of discovering its lurking place in the epidermis.[2]

---

[1] See quotation from John Hunter, stating that he had "frequently seen them picked out of the skin, and examined them with a microscope," p. 859.

[2] Some account of Renucci's mode of procedure will be found in the Gazette des

The subject was next taken up by Albin Gras, a student of St. ouis, who has shown himself well qualified for the undertaking. He ublished a small treatise[1] in the autumn of 1834, in which he gives good summary of the knowledge of our ancestors relative to the nimalcule, explains the manners and habits of the little creature, and letails some excellent experiments made by himself, in reference to he mode of treatment of the disease. The habits of the acarus, when laced upon the skin, are detailed in a chapter of this volume, as also re Gras' experiments with medicinal agents on its powers of vitality. After giving a description of the animalcule, inferior, however, to that f Raspail, the author remarks, "If we observe the mode of progres-ion of the insect on the epidermis, we may easily assure ourselves hat it does not bore its cuniculi in the manner of the mole, by means f its anterior legs, for the legs are not disposed to enable the creature o effect its object in this manner, but it lifts the epidermis by means f its flattened snout. The hairs upon its back aid it in this opera-ion, for, being directed posteriorly, all return on the part of the ani-nal is rendered impossible."

"In examining several sarcoptes with the microscope, we frequently erceive them to lay several small, white, oblong, and transparent ggs, the eggs, according to Duges, being one-third the length of the nimal." "If we place an acarus on the epidermis, we perceive it to lodge about here and there, following by choice the course of the folds f the skin, and every now and then fixing itself upon the epidermis, nd raising the posterior part of its body."

In 1834, Raspail published his "Mémoir comparatif sur l'histoire aturelle de l'insecte de la Gale," in which he details the history of nodern discovery in France relative to the itch-animalcule, a narrative eplete with misadventures, that the perusal of Moufet might have ffectually prevented. In 1831 he had seen and delineated the acarus cabiei of the horse, but it was not until three years afterwards that e was first shown by Renucci the animalcule of the scabies of man. fter describing the epidermal cuniculi which are burrowed by the reature, he observes that the precise seat of the acarus is indicated y a *white* point. His description of the animalcule is the following. is white, scarcely half a millimetre in diameter, head and feet red-sh and transparent, and it is invested by a covering which is hard, nse, and resisting. Its *abdomen* is flat and smooth; the *dorsum* pre-nts three prominences, one, of very large size, in the middle; one, xt in size, over the abdomen; and one near the head. Along the *eral border* of the creature, the dorsal and ventral surface join like carapax and plastrum of a tortoise, and the resemblance to the ell of this animal is increased by the projection of the head and terior legs from the space between the carapax and plastrum in nt, between which they appear capable of retraction. The *head* is

---

pitaux, and Gazette Médicale for 1834. The animalcule was subsequently exhi- ed in London by Mr. Holthouse, who had the opportunity of witnessing Renucci's monstrations in Paris.

[1] Recherches sur l'Acarus, ou Sarcopte de la Gale de l'homme. Par Albin Gras. ris, Octobre 11, 1834.

provided with two large eyes, placed laterally; it is surmounted by four antennæ, which are disposed in two rows between the eyes; the trunk is folded beneath the head. The *anterior legs* have four joints, and a haunch-piece at the base of each; they are terminated by a stiff ambulacrum, furnished at its extremity with a sucker. The *posterior legs* have the same number of pieces as the anterior, but are not more than one-fourth their length, and scarcely project beyond the abdomen. Each leg is terminated by a long hair in place of an ambulacrum. The *anus* projects, more or less, from the posterior border of the carapax, and is bounded by two short parallel hairs on each side. The carapax and plastrum are horny in texture; the former being surmounted by stiff horny hairs, disposed in a certain order, two rows passing backwards from the centre to each side of the anus, and two forwards to each side of the head. The structure of the carapax is reticular, the meshes extending transversely.

The figures accompanying this excellent description of the animal do great injustice to the text; they are inferior to those of Adams, and also to those of Wichmann, neither of which appears to have been known to the author; while he praises the figures of De Geer, which are inferior to both.

Besides the authors above referred to, some account of the acarus scabiei will be found in *Schenkius*, Obs. 676; in *Rosenstein*, on the diseases of children; *Pallas*, de infestis viventibus, 1760; *Sauvages*, Maladies de la Peau; *Miscellanea Curiosa*, 1692; *Annales des Sciences d'Observation*, vol. ii. p. 446, vol. iii. p. 298, 1830; *Lancette Française* Août, 1831; *Bulletin de Thérapeutique*, vol. vii.; *Journal des Connaissances Médicales*, Septembre 15, 1834. And for the comparative history of the animalcule, *Walz*, de la Gale de Mouton.

LINNÆUS, from an imperfect acquaintance with the acarus scabiei, has been the cause of much of the confusion and obscurity which have involved the history of this animalcule. He places *acarus* in his order *aptera*, and gives the following as the characters of the genus:[1] *Os* proboscide carens, haustello vaginâ bivalvi, cylindricâ, palpis duobus compressis, æqualibus, haustelli longitudine. *Oculi* duo ad latera capitis. *Pedes* octo. *Tentacula* duo, articulata, pediformia.

In the first edition of the Fauna Suecica,[2] Linnæus describes the animalcule under the specific designation of "*acarus humanus subcutaneus.*" In the second edition,[3] he considers the acarus humanus subcutaneus as belonging to the same species as the flour-mite and cheese-mite; and in the "Systema Naturæ," observes, "inter sirones Farinæ, Scabiei, Phthiseos, Hemitritæi vix etiamnum reperiri alias differentias quam a loco petitas;" while he admits the itch-animalcule as a new species, under the name of "*acarus exulcerans.*" The specific characters of the two species he thus indicates:[4]—

"*Acarus siro.*—A. lateribus sublobatis, pedibus quatuor posticis longissimis, femoribus capiteque ferrugineis; abdomine setoso.

---

[1] Systema Naturæ, 1767.

[2] Entomologia Faunæ Suecicæ. Viller's edition, 1789. No. 1194.

[3] Anno 1761. No. 1979.

[4] Fauna Suecica. Editio a , 1761, Nos. 1975, 1976.

"β. *A. humanus subcutaneus.*—Habitat sub cute hominis scabiem aussans ubi vesiculam excitavit, parum recedit corporis rugis secutus, uiescit iterum et titillationem excitat; nudis oculis sub cuticulâ delicescens observatur ab adsueto acu facile eximitur, ungui impositus vix ovetur, si vero oris calido halitu affletur agilis in ungue cursitat. *escriptio.*—Minimus, magnitudine vix lendis subrotundus, capite vix onspicuo, ore ut et pedibus rufis sive testaceis; abdomen ovatum yalinum; in dorso duplici linea lunari seu pari linearum fuscarum curvatarum notatum et quasi lobo utrinque.

"*Acarus exulcerans.*—A. pedibus longissimis setaceis; anticis duos brevibus. Habitat in scabie ferinâ, cujus caussa est."

In the "Entomologia Faunæ Suecicæ" of Linnæus, edited by Vilrs,[1] the editor retains the above "*Descriptio*" in connection with arus siro, but the "Habitat" he transfers to acarus exulcerans, mmencing it thus: "Habitat in scabie ferinâ, sub cute hominis." o this he adds the observation of Fabricius, "Acaro sirone minor et stinctus et forte acaro exulcerante non diversus." Then follows the Descriptio. A. albus, diaphanus; corpus rotundatum, scabrum, nigro n lineatum uti acarus siro." The editor concludes with two remarks om his own pen: "Obs. 1. In Fauna Suecica, ed. 1, acarum farinæ scabiei separaverat Linnæus, postea conjunxit, sed DD. Geoff., ab., De Geer, pro diversis speciebus rité habuerunt; ergo veré disncti. Obs. 2. Scabiei certe hic acarus caussa est."

In the 13th edition[2] of the "Systema Naturæ," the acarus siro, comrising the meal-mite and cheese mite, is separated from acarus scabiei, ut the acarus exulcerans is retained. The specific characters of the arus scabiei are thus stated: *Acarus Scabiei.* A. albus, pedibus rufeentibus; posterioribus quatuor seta longissima. *Habitat* in ulcerius scabiosorum, cutis rugas sequendo penetrans, titillationem excins; utrum causa, an potius, symptoma mali? Sirone multo minor." f the acarus exulcerans, Linnæus remarks, "Habitat in ulceribus abie ferinâ leborantium. An satis distinctus ab A. scabiei?"

In the "Amœnitates Academicæ"[3] the following passages, which e deserving of notice, occur. The first conveys the best idea of the at and appearance beneath the cuticle of the acarus that we have et with in any writer; the latter puts forth the unfortunate observaon which led Linnæus into error with regard to the classification of e itch-animalcule. Speaking of the vesicles, the writer observes, Parum vero ab illa in ruga cutis punctum quoddam fuscum quod ondum in vesiculam se extulit, fit tamen duobus diebus progressis; cûs aculeo lens minima eximitur, quæ ungui imposita et halitu oris fflata, in ungue cursitat. Oculis armatis ulterius appareat insectum oc octo habere pedes, setas quasdam in dorso et acarum esse jam llatum." "Si mater aut nutrix infantem farinâ cereali, in qua acari epissime habitant, adsperserit, infans in ea parte primo et toto tandem orpore scabie laboravit."

---

[1] Anno 1789.

[2] Edited by Gmelin, anno 1788, vol. v.

[3] Miracula Insectorum; by G. E. Avelin; Upsal, 1752. Amœnitat. Acad., vol. i. p. 333.

In Sweden, remarks Linnæus, the itch-animalcule is named *Klamosk.*

SCHÆFFER also describes the animalcule in his "Elementa Entomologiæ" in 1776.

BARON DE GEER was thoroughly well acquainted with the itch-animalcule, and has left an admirable description of the creature, as well as two excellent figures.[1] The latter, however, are not equal to the description. He points out the error of Linnæus with regard to classification, and expresses his conviction of the identity of acarus scabiei and acarus exulcerans. The specific characters of the acarus scabiei he states to be as follows: "Acarus subrotundus albus, pedibus rufescentibus brevibus; posticis quatuor seta longissima, plantis quatuor anticis fistulatis capitulo terminatis." The capitulum in this definition he speaks of as being "en forme de vessie;" and in reference to scabies he observes, "Ces mittes sont même l'unique cause de cette vilaine maladie."

FABRICIUS,[2] in his "Systema Entomologicæ," places the acarus in the order *antliata*, which he characterizes as possessing "os, haustello, sine proboscide." The characters of the genus he thus designates: "*Acarus.*—Haustellum, vagina bivalvi, cylindrica; palpi duo longitudine haustelli." To which, in the amended edition of 1794, he adds, "antennæ filiformes." With regard to specific characters, Fabricius adopts the definitions of Linnæus, and admits two species as inhabiting the skin of man, namely, the acarus siro and the acarus exulcerans. Of the former he remarks: "Habitat in caseo, farinâ, diutius asservatis, cutem hominis rugas secutus penetrat, vesiculum et titillationem excitat. Caussam, nec symptoma morbi esse evincunt observata analogia cum Gallis contagium cura." And of the latter: "Habitat in scabie ferinâ."

In the "Fauna Grœnlandica,"[3] the same author observes, with regard to acarus siro: "Habitat in vesiculâ scabiei Grœnlandorum, qui illum sed apte eximere scientes, mihi miranti, ut vivum animal incedentem ostenderunt. En Grœnlandos Entomologos." "Varietatem farinæ eandem etiam in farina mea vidi; an vero in Grœnlandia domi habeat, incertus sum dum Grœnlandi farinaceis non utuntur." He remarks, also, that in Greenland the animalcule is named "*Okok,*" and that in the natural history of Bomares it is termed "*Scab-orm.*"

In the "Entomologia Systemica, emendata,"[4] Fabricius adopts the opinion of De Geer with regard to the identity of the acarus siro with the acarus domesticus, or cheese and meal mite, and admits the itch-animalcule as a distinct species, with the following characters: *Acarus scabiei*. Albus, pedibus rufescentibus, posticis quatuor longissima." He then continues, "multo minor et distinctus ab acaro sirone." He observes also, that this species corresponds with the acarus exulcerans, and quotes a passage from Linnæus to the same effect.

MÜLLER, in his "Prodromus Zoologiæ Danicæ,"[5] adopting the early classification of Linnæus, treats of the itch-animalcule under the designaion of acarus siro. In Denmark, he observes, the creature is called *Krid-orm*, *Ring-orm*, and *Meel-mid.* The latter term, which, translated, would be *meal-mite*, indicates the popular extension, or possibly the popular origin, of the error of the great Swedish naturalist.

---

[1] Mémoires pour servir à l'histoire des insectes. Vol. vii. 1778, p. 94. pl. 5. figs.

[2] Johan. Christ. Fabricius. Ed. 1775, p. 813.

[3] Anno 1780, p. 221.

[4] Anno 1794, vol. iv.

[5] Otho Fredericus Müller. Anno 1776.

LATREILLE established the itch-animalcule as a new genus under the name of *sarcoptes hominis*, with the following description: Body apterous; no distinction of head or segments; manducating organ prominent, without apparent palpi; eight short legs. Subsequently, however, on the occasion of the memorable juggle of Gales, Latreille omitted the genus altogether.

The existence of the acarus scabiei is without question; we have extracted as many as twenty from their retreat at a single sitting. We have placed them on a slide of glass, and seen them run; and after the business of the day has been over, we have examined them with the microscope, and found them still active, living for several hours after our examination. We regard them as the unique cause of scabies, and as a necessary feature in the diagnosis of that disease.

When examined with the naked eye the acarus looks white and shining, globular in form, and very aptly resembling the little bladder of water of Bonomo. There is no difficulty in extracting it from the skin; the cuniculus is seen without difficulty; the end of the cuniculus s perceived to be a little raised, while a reddish-brown semilunar peck is seen beneath it. As soon as this little eminence of epidermis s lifted, if the end of the needle or pin with which the operation is performed be examined, the minute, white, and shining globe will probably be observed attached to the instrument. If there be no such bject, the point of the needle placed again beneath the raised capsule f epidermis will pretty certainly draw it forth. This facility of xtracting the little creature is due to its great power of clinging to ny object with which it comes in contact.

When the acarus is seen running upon the surface of a plate of lass, it may be perceived that its anterior margin presents a dusky int of color, and the examination of this part of the creature with he microscope brings into view a head not unlike that of a tortoise, nd a pair of large and strong legs on each side of the head. These rgans are encased in a moderately thick layer of chytine, and have onsequently the reddish-brown tint of the case of certain insects, or f the bright part of a thin layer of tortoise-shell. Proceeding with ur examination, we perceive the general outline of the animal to be ubrotund, the antero-posterior predominating very little over the ransverse diameter; the anterior part of the creature being broad, nd the posterior somewhat narrower, and semicircular, but broader n the female than in the male. The ventral surface of the acarus is at, and occupied by the head and eight legs; the dorsal surface is rched, uneven, and covered by numerous spines; and projecting ackwards from the posterior segment of the animal are twelve hairke filaments, some long and others short.

With the view of determining the size of the acarus, we measured en specimens, and found them vary between $\frac{1}{147}$ and $\frac{1}{77}$ of an inch in length, and between $\frac{1}{193}$ and $\frac{1}{94}$ in breadth. The following were the measurements of seven of this number:—

Length	$\frac{1}{147}$	$\frac{1}{128}$	$\frac{1}{118}$	$\frac{1}{94}$	$\frac{1}{88}$	$\frac{1}{77}$	$\frac{1}{71}$
Breadth	$\frac{1}{192}$	$\frac{1}{183}$	$\frac{1}{147}$	$\frac{1}{143}$	$\frac{1}{186}$	$\frac{1}{186}$	$\frac{1}{94}$

Examined with a quarter or eighth of an inch object-glass, or with Powell's half-inch, the case of the body of the acarus is seen to be composed of narrow plates, variously disposed with regard to the axis of the animal, but chiefly transversely, and resembling a coat of plate armor. The connecting membrane of these plates permits of a certain degree of movement between them. The *dorsum* of the creature is convex, but uneven, and exhibits upon its borders a tendency to division into a thoracic and an abdominal segment, the former being somewhat broader than the latter, especially in the male. Anteriorly, the dorsal case terminates in a sharp border, which is scalloped, and forms a jutting roof of protection to the head and four anterior legs. Posteriorly, the case is somewhat deeply cleft, forming a groove, which corresponds on the ventral surface with the sexual and anal aperture.

The dorsal surface of the creature is covered with tubercles, spines, and hair-bearing tubercles, regularly and very remarkably disposed. The *venter* of the acarus is flat, and the abdominal portion slightly convex. The posterior part of the latter is grooved upon the middle line, and furnished with an anal and sexual aperture of considerable size.

The *head* is an oblong cylinder, more or less obtusely pointed in front, flattened beneath, enlarging slightly laterally towards the body of the creature, and implanted by its posterior end into the angular interval left by the divergence of the anterior pair of legs. The lateral enlargement towards the root of the head is the most suitable place for eyes; but we have not been able to detect those organs. The head is surmounted by two rows of stiff hairs. The mouth is an oblong aperture situated upon the under surface of the head, and becoming broad towards the root of the latter. It is bounded laterally by a double pair of palpi and mandibles, the latter being terminated by strong chelæ; while at the bottom of the oral fissure is the buccal opening, and, according to Bourguignon, the respiratory aperture. The head is capable of elongation or retraction beneath the dorsal plate or carapax.

The *legs* are eight in number, four being anterior, and four posterior; the anterior legs are large and powerful, the posterior small. The anterior pair of legs are so large, so closely placed to the head, and directed so immediately forwards, as to deserve the appellation of arms. The next pair follow immediately on the preceding, but are directed outwards. The legs are conical in form, tapering, when extended, to an obtuse point, and composed of a hip-piece and three circular segments. The hip-pieces of the two anterior legs join at an obtuse angle, and form the limit of the root of the head. The point of meeting of these hip-pieces is the commencement of a sternal crest, which runs backwards on the plastrum for a short distance, and

·minates by a rounded extremity. A similar crest is formed at ch side by the junction of the hip-pieces of the anterior and lateral ;, the crest being directed backwards and inwards towards the ·mination of the sternal crest. Each of the annular segments of ; anterior legs is furnished with three or four bristly hairs, which ınd out at right angles from the segment. Moreover, the extremity each anterior leg is provided with a tubular cylinder [tarsus] as ıg as the entire leg, and terminated at its extremity by a foot vided on its sole into five lobes.

The head and four anterior legs are covered with a strong case of ytine, which presents the ordinary color of insect cases, namely, a ɔwnish red. The plastrum is slightly tinted with a similar hue, .t the three crests formed by the hip-pieces are, in virtue of their .ckness, of a deep color. These are the red lines of Gras, Raspail, d others. The posterior legs have but a thin case of chytine, and ; less deeply colored. The colored covering of the head and legs ntrasts very strongly with the yellowish white of the body of the imal.

The posterior legs spring from the posterior part of the thoracic gment, two at each side; they are conical in form, composed of three gments, and each leg is connected to the body by means of a trian- ılar and flattened hip-piece. Each posterior leg is terminated by a ıg, membranous, hair-like organ, and the posterior part in the male ' a tarsus and pente-lobate foot.

We have already alluded to the cleft on the posterior part of the dominal segment of the animal, and the papilla which bounds the al opening posteriorly. A pair of hair-like filaments mounted on ort tubercles are found on each side of this opening, near the pos- rior margin of the abdomen. These four filaments, with the four ir-like organs of the posterior legs, and the four directed backwards ɔm the lateral part of the thoracic segment, form the twelve hair- ɛe filaments which are observed along the posterior margin of the .imal. These filaments, together with the hairs, spines, and tubercles ;uated on the dorsum, fix the animal in its cuniculus while using its ɪad as a lever to force up the epidermis in front.

We have not been able to distinguish any distinctive sexual organs. a sketch before us is drawn a conical projection in this region, but ; have not seen that appearance repeated. The ova we have seen, ıt the internal organization of the animalcule is obscured by the rge collection of adipose cells which form its superficial stratum.

The above description of the animalcule, founded on our own re- arches, was published in the first edition of this book in 1842; a tle later we succeeded in observing the tubular tarsus and pente- bate foot on the posterior pair of legs; and were led to infer, from ır examination of the mange-animalcule of the horse (1843), that the ructure in question was an attribute of the male, and was intended a means of more rapid progression when in pursuit of the female, ıd also as a means of clasping the female during coitus. The male the mange animalcule is furnished with a pair of powerful suckers hold the female, and the prehensile foot is found on the third pair of legs, which are largely developed, while the fourth pair are small and aborted. Whereas in the female the fourth pair of legs are the largest, and provided with a tubular foot and ambulacrum; and the third pair is smaller and wanting in that appendage, being provided instead with a pair of enormously long hairs.

The natural history of the acarus scabiei has since this period been enriched by the labors of Hebra, Eichstedt, Bourguignon, Lanquetin, Gustav Simon, Gudden; and more recently by Fuchs, Bamberger, Gumpert, Kohn, Reinhardt, Gerlach, Worms, Leydig, Rudolph Bergh, Karl Seggel, Fürstenberg, &c. The distinction of the sexes is now well established; the migratory habits of the male; the retirement and seclusion of the impregnated female in the cuniculus during the deposit of her ova; the hatching of the ova; the production of larvæ having only six legs; the moult and metamorphosis of the larvæ; the instincts of the young previously to assuming the habits of the male on the one hand, and those of the impregnated female on the other; and the habits of activity of the animalcules during the first two hours of the warmth of bed.

The wants of the acarus, says Bourguignon, are three in number; warmth, air to breathe, and the animal juices of the skin. His favorite temperature ranges between 75° and 95°; and below 50° he dies; the burrowing female, while depositing her ova, perforates the vault of epidermis immediately above her for the sake of air for herself and for her ova; while the strong forceps of the mandibles are brought into play to procure a flow of juices fitted for nutrition. The acarus does not breathe by means of spiracles and lateral tracheæ like certain insects, but by means of an opening situated near the buccal aperture through which he inspires the air, globule by globule, and passes it onwards through the œsophagus into the tissues of the body. The impregnated females dig long burrows in the epidermis, depositing their ova as they move onwards, and never reappearing on the skin; the larvæ and young females avail themselves of broken surfaces, or burrow for a short distance in the cuticle; and the males hide themselves under any protecting edge during the day, and ramble actively over the surface at night, when they are stimulated by the warmth of bed. The males course along the skin with extraordinary speed, and are able, according to Bourguignon, to run from the hand to the shoulder in the space of ten minutes. This author thinks it possible that a scabies might be engendered by the males alone, or by the unimpregnated females alone, in which case all the irritation of itch might be present, without the cuniculi of the impregnated females, which are considered pathognomonic of the disease.

In his study of the ovology of the acarus, Bourguignon observed that the female laid four eggs at a time, sometimes in pairs, sometimes in single line; and these ova are seen in the cuticle, separated every here and there, or bordered by small black fecal masses. The newly deposited ovum is a thin membranous film, filled with a colorless fluid, holding in suspension an abundance of minute dark granules; in forty-eight hours th[illegible]les are partially dissolved, and small cells take their place, th[illegible]d granules being dispersed among the parasite with astonishing frequency, even in cases where the skin presents all the characters of ordinary health. Of living persons, he detected the animal in three out of the men, in the sebaceous matter squeezed out by pressure from the follicles; but in the dead he discovered them in almost every individual examined; the only exceptions out of ten bodies being two newly-born children. The mode of examination in the case of the dead was by means of thin sections of the skin. The animalcules imbedded in the sebaceous matter are found in the hair-follicles near the outlet, their long axis corresponding with that of the follicle, and their heads directed inwards; in four instances, the head and part of the body of the little creature were lodged in a sebiferous duct. In normal hair-follicles there are usually not more than one or two of these parasites; in rare instances, three or four; but where the sebaceous substance is concreted, their number varies from two to six; in one case he found as many as eleven, and in another thirteen. They are tardy in their movements, but retain their vitality for a considerable length of time; they were found moving after a confinement of eight and twelve hours between two plates of glass, and in one body they were alive after the person had been dead for six days.

The animalcule presents several forms, which correspond with stages of development. In the most common form, the creature varies from 0.085 to 0.125 of a line (German) in length, and 0.020 of a line in breadth; it has an elongated figure, a long thoracic portion, with four pairs of legs, and an abdomen three times as long as the thorax, and tapering gradually to an obtusely-pointed extremity. The head consists of two large palpi, and a proboscis situated between the two. The *palpi* are bi-jointed, and terminated by several small tooth-like processes. The *proboscis*, which is capable of elongation and retraction, resembles a long tube, upon which lies a triangular organ, having its narrow base directed towards the root of the proboscis, and extending by its apex almost to the extremity of that organ. This triangular body consists of two bristles, lying side by side. The *head* is continuous directly with the thorax, without any precise line of demarcation. The *legs* are short, conical, and composed of three segments, and upon the latter is an appearance of plaits. The leg is terminated by three claws, one long, the other two short. From the anterior part of the basis of each leg a double line runs transversely inwards across the under surface of the thorax, towards the middle, where one of the lines passes forwards and the other backwards, serving together to form a central longitudinal double line. The transverse lines are probably continued completely around the thorax. The thorax is highest at about the middle, and broadest at the point corresponding with the second pair of legs. The *abdomen* is marked by a number of transverse lines produced by a series of grooves or contractions, which give the margin a resemblance to a file. The contents of the abdomen are granular, and similar to those of pigment cells, and among these granules are several large transparent spots, of a round, oval, and sometimes quadrate form, like globules of oil. The tail is free from granules.

A second form was remarkable from having the abdomen once only, or one and a half times longer than the thorax. The abdomen is more or less obtusely pointed posteriorly, and marked by the characteristic transverse lines.

In a third form the abdomen is very short and acutely pointed. The thorax is broad, and there are no transverse lines on the abdomen.

In a fourth form the whole animal is remarkable for its slender figure; the abdomen is very long; there are only three pairs of legs, no transverse lines on the abdomen, and its granular contents are more lightly tinted.

To what part of the animal kingdom does the parasite belong? asks Simon; and this question he refers to an eminent entomologist of Berlin, who returned him the following answer: The animal is clearly nòt an Helminthus, but its entire organization, and especially the great distinctness of its different pairs of legs, betoken it to belong to the great division Insecta, of Linnæus. Of this extensive group, the parasite before us appertains to the class Arachnida, for there is no separation between the head and thorax, there are no antennæ, and it has four pairs of legs. Judging from the form of its mouth, it should belong to the order Acarus. The proboscis is the under lip lengthened out, a form which this organ assumes in all mites. The two bristles lying on the proboscis are the mandibles, and the pair of two-jointed organs lying by the side of the proboscis are the maxillary palpi. The different forms in which the creature has been seen are stages of development. In the early stage of the mite the presence of three pairs of legs is a common character. The lengthened form here principally described is the second stage of development, and those with shorter abdominal segments represent later periods. It is therefore probable, that in the fully developed stage, the abdomen is lost altogether, and we are inclined to believe that this last stage is not as yet known to observers. The distinctions of genus and sex are, consequently, not yet practicable.

In general, such a metamorphosis as the one here described does not occur in the mite, for these creatures retain the form which they possessed on first breaking from the egg, even although an additional pair of legs have to be developed. On the other hand, Hartig has observed and described in the mite of the pine-gall (*Oribata geniculata*, Latreille) a metamorphosis precisely analogous to that of the animalcule before us.

These animalcules cannot be metamorphosed into parasitic mites, for the itch-mite and mange-mite have distinctly segmented legs with joint-lobes (Heftläppchen), and no metamorphosis, since they issue from the egg already provided with four pairs of legs.[1] Earlier, some relationship might have been inferred between this animalcule and the bird-mite (Dermanyssus), which in its young state, has only six legs; but the worm like form of our animalcule in its early stages, and the remarkable shortness of its legs, render comparison between them impossible.

---

[1] These acari have only three pairs of legs in their embryo state.

The animal found by Donné in the mucus of the vagina (Trichomonas vaginalis) which this observer considers to belong to the Infusoria, and, according to others, is more nearly related to Acarus, differs in many points, according to Donné's description and figure, from the acarus of the hair-follicles. For instance, it is often not more than double the size of a blood-corpuscle, and at most $\frac{1}{100}$ of a line long; it has a round or elliptic-shaped body, with a whip-like appendage in front, and along one of its sides several fine fibres.[1]

Again, as the animalcule of the hair-follicles has not yet, as we conjecture, been seen in its perfect shape, it is possible, although little probable, that this last stage of development may correspond with some already known mite. In no case, however, could the animalcule, for the before-mentioned reasons, become one of the ordinary parasites of the human skin; but this creature must present the remarkable peculiarity of living within the human body in its young state, and in its perfect state of living externally to it. Further researches may serve to establish this question; in the mean time, however, I will designate this animal, from its habitat in the hair-follicles, *acarus folliculorum.*

About six times have I seen, both in the comedones of living persons, and in the hair-follicles of the dead, a heart-shaped body, having a small process projecting from its broader end. This body was somewhat longer than the breadth of the animal, of a brownish color, and appeared to be filled with a granular substance. In the hair-follicles it was always close to the animalcule, but not connected with it. This observation, with the fact of the non-resemblance of the heart-shaped body to any known human structure, gives force to the conjecture that it must bear some relation to the acarus. It might, for example, be an egg-shell, out of which an embryo has escaped.

In reference to the movements of the creature I have been able to make the following observations: The palpi are capable of being moved in different directions, of being drawn in and stretched out. The latter movements are remarked also in the proboscis, which is sometimes thrust beyond the palpi, and sometimes drawn back. The legs can also be moved in various directions, and the creature is often seen to move them backwards and forwards, like a pendulum; they can also be retracted or stretched forth. The thorax and body admit of being curved. Although the creature makes all these movements, it does not walk, but merely changes its position from side to side; once, indeed, I saw an acarus walk a distance equal to his own length, but then it was along a hair, which he closely grasped.

Simon remarks, that he saw the first and second described forms most frequently, and the third and fourth forms, namely, that with the short and pointed abdómen, and the slender animal with three pairs of legs, only rarely; the former in the proportion of ten per cent., the latter of six per cent. But he feels so convinced of the accuracy of his observation, that he regards as the most positive of his data the presence of six legs only in some.

---

[1] The trichomonas vaginalis, with which we are well acquainted, bears no resemblance whatever to the steatozoon folliculorum. The trichomonas is a globular sac, slightly drawn out to a point, and having connected with this point a flexible and mobile pedicle, which acts the part of a sucker. The sac measures about $\frac{1}{1000}$ of an inch in diameter. We have not seen Donné's figure.

After perusing the account of the steatozoon folliculorum, as given by its discoverer,[1] we determined to proceed to a verification of his researches, and being provided with an instrument probably superior to that employed by Simon, we succeeded in making out certain points of structure that had escaped his observation.

We were not long in obtaining subjects; almost every face we met supplied us with abundance; and the difficulty seemed to be, not to find the creature, but to find any individual, with the exception, according to Simon, of newly-born children, in whom these animalcules do not exist. It is by no means necessary to commence our search by selecting a papule of acne punctata, or even a comedo; almost every collection of sebaceous substance which can be squeezed forth from the numberless cutaneous apertures upon the nose, the forehead, the face, and probably from other parts of the body, will furnish subjects. Moreover, as Simon observed, the parasites are situated near the mouth of the follicle; consequently that portion of sebaceous substance which is squeezed out with the least force is the part which is most likely to be inhabited by the animalcule.

The steatozoon folliculorum would seem to give rise to no uncomfortable effects by its presence, unless, perchance, it should multiply to such an extent as to become a source of irritation to the follicle, a supposition which Simon admits, for it is found in persons whose skin is perfectly healthy and clear, and in whom no signs of cutaneous irritation are present. These animalcules undoubtedly feed on the sebaceous substance in which they lie imbedded, and which is the cause of their existence. We have commonly found two in the small mass of this substance expressed by the fingers, often four, five, and, in one instance, eight, closely held together. Hitherto we have confined our examinations to healthy persons, having levied for contributions among our more intimate friends, and have not as yet had recourse to a skin studded with acne.

In the course of our investigations we have examined several hundreds of these animalcules, and have seen all the forms described by Simon; we have also been able to discover the embryo and the ovum. We cannot however, agree with Simon with regard to the phases of development, which he imagines to indicate perfection of growth; on the contrary, we are inclined to believe the most common to be the most mature form, and the third or most perfect of Simon, an embryonic form. The following are the extremes of measurement of the perfect animal in fractions of an English inch, according to our examinations:—

Entire length, ...	$\frac{1}{135}$	$\frac{1}{64}$
Length of abdomen, ...	$\frac{1}{227}$	$\frac{1}{88}$
Breadth of thorax, ...	$\frac{1}{555}$	$\frac{1}{535}$

---

[1] From Hebra we learn that the acarus folliculorum was first detected by Henlé in the ceruminous glands, the year before its discovery by Simon. Notice of Henlé's discovery is given in the Beobachtungen aus der Oestlichen Schweiz, Dec. 1841.

The animal is divisible into head, thorax, and abdomen, the whole of these parts being well and distinctly marked.

The *head* represents in form a truncated cone, flattened from above downwards, and directed obliquely downwards from the anterior part of the trunk. It is composed of two large lateral organs, termed by Simon maxillary palpi, and of an intermediate triangular organ. The *maxillary palpi* constitute the most considerable portion of the head. Each is composed of three segments, and furnished with a prehensile extremity, consisting of three curved finger-like organs, or claws. The first segment of the maxillary palpus is large and long, the two succeeding segments are smaller, and in every respect resemble the segments of which the legs are composed. Indeed, these maxillary palpi perform the office of arms, the first segment being fixed, the next two bending downwards under the first, or being stretched directly forwards. It is this flexion and extension of a jointed organ that Simon mistook for protrusion and retraction. On the under part of the first segment of the maxillary palpi we have observed a circle,

Fig. W.

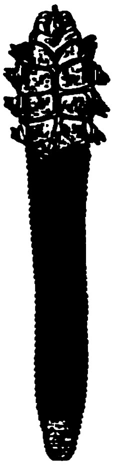


Fig. X.

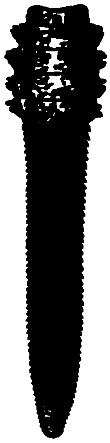


Fig. Y.

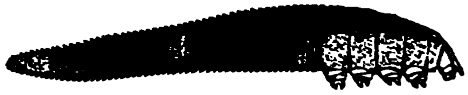


Fig. W.—The steatozoon seen upon its ventral surface. The structure of the head, feet, and plastrum is shown, as well as the annulate character of the abdomen. The figure is drawn to a scale of a line to the 1-2500 of an inch.

Fig. X.—The steatozoon viewed upon its dorsal aspect. The head is retracted within the thorax.

Fig Y.—The steatozoon viewed upon its lateral aspect. The serration of the abdominal segments is exaggerated in all the figures.

ich appears to bear some resemblance to an eye; upon this point, vever, we are not perfectly satisfied.

he *triangular organ*, which includes the mouth of the creature, is posed of three elementary parts, namely: 1. Of a triangular pro- s, a prolongation of the membranous case of the animal from the k along the middle line of the upper surface of the head, to the remity of the latter, where it curves downwards, and in the latter ation consists of two parallel pieces placed side by side. 2. Of a nel-shaped and tubular organ, or sucker, occupying a central po- on with regard to all the other cephalic organs. 3. Of another ngular narrow process, situated on the under part of the head, and posed of two lateral pieces.

he head is connected to the anterior segment of the thorax by a e membrane, marked on its surface by transverse lines, which indi- its susceptibility of being thrown into folds. This membrane is nded to admit of the retraction and protrusion of the head, and by means the entire head may be drawn in and buried deeply beneath level of the membranous fold here described, so that the head is irely lost to view, and the animal looks decapitated, the fold of the vical membrane forming a perfectly straight border in front. This peculiarity in the structure of the animal which has been passed r by Simon; he makes no allusion to any such power, and he loubtedly would have done so had he observed it, for the effect of retraction is too remarkable not to be instanly recognized. In , when an animalcule is alternately retracting and extending its d, the impression to the eye of the observer is that of a creature while furnished with a well-defined head, and the next instant apitated back almost to the level of the anterior segment of the rax. The appearance presented by the animal during the retrac- of its head is represented in the wood engraving, fig. X.

he movements of the maxillary palpi are flexion of the last two nents, the first segment appearing to be firmly connected with its ow to the opposite side, and being very limited in its movement lexion. The extension of these segments upon the first has led on to infer that the palpus might be pushed out, and the sudden ppearance of the two segments by flexion underneath the first, induced him further to believe that they might also be retracted. night be imagined, that when the creature is seen from its under ace, this error would become immediately apparent; but that is the case; for the fore-shortening exhibited in the latter view only ls to increase the illusion. The three finger-like claws at the emity of the palpus are also capable of motion, and grasp upon object within their reach. The triangular pieces both of the er and lower part of the head, move upwards and downwards on other, and at the same time separate laterally to a slight extent.

he *thorax*, which is the broadest and thickest part of the animal, somewhat tun-shaped, is flattened on its under surface. It is posed of four broad segments, which are joined by a connecting nbrane on the dorsum and sides of the creature, but are continu- inferiorly with the broad and strong plastrum which covers the whole inferior surface of the thorax. The segments are somewhat convex in their antero-posterior diameter, particularly at the upper part, so that the outline of the chest in this situation has the appearance of being slightly fluted. The anchylosis of the four segments composing the plastrum is indicated by four transverse markings, consisting each of two ridges, which correspond peripherally with the interspaces between the legs and centrally bifurcate, one passing forward to unite with the line in front, the other passing back, to become continuous with that behind. The same arrangement takes place on the opposite side, and a sternal line, consisting of a double crest, is consequently formed. The ridges of the plastrum here described being thicker than the rest of the covering of the animal, are strongly and characteristically marked. The segmented structure of the thorax permits of a certain degree of movement in this part of the creature.

The *legs*, eight in number, are connected with the sides of the plastrum, each segment of the thorax sustaining one pair of these organs. They are conical in figure, the base of the cone being broad, and its apex obtusely truncated, and furnished with three finger-like claws. Each leg is composed of three segments; of a proximal segment, which is large, and almost triangular in form, the base of the triangle (scalene) being directed forwards, and two smaller, cylindrical segments; the distal segment supporting the three finger-like organs above noted. The legs are all of the same size.

The movements of the legs are a forward and a backward movement, the two small segments forming an acute angle in their bend forwards upon the proximal piece, and being extended directly backwards when the extension is completed; so that, when the creature advances its leg, and places it on a flat surface, the two small segments are directed forwards, and, by their under side, rest upon the ground, together with the foot, like the long hind-foot of the rabbit; then, clutching upon some object within reach, the segments are carried backwards until they form a straight line with the axis of the proximal piece. By this movement an enormous power of propulsion is gained by the creature, and it moves forward with considerable force. Simon remarks, that the animal performs a swimming movement with its legs, but without making any advance. That observation may be explained, by its compression, however slight, between two plates of glass; by the injury the animal has received in being pressed from the hair-follicle along with the sebaceous substance; and by the fact of the glass upon which it attempts to walk affording no rough points to which it can catch itself. The legs are irregular and independent in their movements.

The *abdomen* is somewhat variable in point of length, but generally more than twice or three times longer than the thorax. It is flattened on its under part, and convex above, and tapers gradually from its base to its extremity, where it terminates in a rounded point. It is composed of a series of extremely narrow annular segments, which overlap each other from before backwards. When examined on either surface, the margins of these segments present the appearance of a regular succession of transverse lines; and when seen along the outline, they give it the character of a serrated edge. The extremity of the abdomen is sometimes lengthened out into a small pointed process. The aperture of the anus is seen on the under surface of the abdomen, near its extremity. The annulated structure of the abdomen permits it to move with considerable freedom, and to curve in any direction.

Of the *internal structure*, Simon says nothing more than that the abdomen is filled with granular contents, and exhibits several large and irregular vesicles, which he compares to oil-globules. The granular matter of Simon is cell-tissue in its most simple form; with a good object-glass, the cells are quite distinct, and appear to be filled with adipose fluid. These cells are variable in point of size, some being exceedingly minute, and others of moderate bulk; they are assembled in such considerable number in the abdomen, as to give it a dark appearance, and forming a thin stratum on the inner surface of the integument, obscure the alimentary canal. Sometimes the cells are limited to the abdomen, but more frequently they extend into the thorax, forming a narrow line that may be traced almost as far as the head. By careful examination, we have succeeded in distinguishing the muscular fasciculi which move the legs, and a broad œsophagus. In the abdomen we have traced also the outline of an alimentary canal, and have seen it terminate by an infundibuliform extremity at the anus. The transparent cell-like organs seen in the abdomen of the perfect animal, we regard as dilatations, or convolutions of the alimentary canal; and a dark, brownish mass at the commencement of the abdomen we consider to be the liver. We have been unable to discover any sexual differences in the numerous examples which we have examined.

CHAPTER XXVIII.

FORMULARY OF SELECTED REMEDIES.

ARSENICAL REMEDIES.

SOLUTIO SOLVENTIS MINERALIS, DE VALANGIN; VEL, LIQUOR ACIDI ARSENIOSI HYDROCHLORICI.

℞.—[illegible] arseniosi	gr. xxx.
[illegible] ci	gr. xc.
[illegible]	℥xx.

[illegible] roch[illegible] ric acid diluted with one ounce of the [illegible] This solution contains one grain in a [illegible], somewhat less than half the strength [illegible] s solution, which contains one grain in two drachms. The li[illegible] may be substituted for De Valangin's solution, [illegible] ore [illegible] an half weaker than the liquor arsenicalis, [illegible] grai[illegible] in four drachms.

[illegible] ARSENIOSI HYDROCHLORICI.

℞.—L[illegible] oridi	ʒiv.
[illegible] diluti	ʒij.
[illegible] i	ʒij.
[illegible]	℥iij.
Misce.	

A drachm contains ten minims of the arsenical solution, and may be taken alone, or in water, *with meals*, three times a day.

MISTURA FERRO-ARSENICALIS.

℞.—Vini ferri	℥iss.
Syrupi simplicis,	
Liquoris arsenicalis[1]	āā ʒij.
Aquæ destillatæ	℥ij.
Misce.	

The dose of one drachm contains somewhat less than four minims, and may be administered three times a day; either *with meals*, or directly after. When preferred, the liquor sodæ arseniatis (Pearson's solution), or liquor ammoniæ arsenitis, may be substituted for liquor arsenicalis.

For infants, the prescribed quantity of liquor arsenicalis may be half a drachm or one drachm, giving respectively one minim and two minims the dose, and increasing the syrup to three drachms and a half, and three drachms. We recommend also the substitution of aqua anethi for aqua destillata.

MISTURA ARSENICI CUM MORRHUA.

℞.—Olei morrhuæ	℥ij.
Vitelli ovi	no. j.
Liquoris arsenicalis	ʒj.
Syrupi simplicis	ʒij.
Aquæ destillatæ	q. s. ad. ℥iv.
Misce.	

A drachm to be taken *with meals*, or directly after, three times a day; for infants; the dose contains somewhat less than two minims of liquor arsenicalis.

---

[1] The liquor arsenicalis should be prepared without the compound tincture of lavender; the latter rom its flavor will be found very objectionable in practice.

MISTURA ARSENICI, IODIDI, ET HYDRARGYRI.

℞.—Liq. hydriodatis hydrargyri et arsenici, Donovani,	℥j.
Syrupi simplicis	℥iij.

Misce.

drachm to be taken in an ounce of water, *with meals*, three times a day.

LIQUOR ARSENICI IODIDI, IODURETI.

Neligan's formula.

℞.—Liquoris arsenicalis	♏ lxxx.
Potassii iodidi	gr. xvj.
Iodidi puri	gr. iv.
Syrupi florum aurantii	℥ij.

Misce et solve.

drachm contains five minims of liquor arsenicalis, one grain of iodide of potas- n, and a quarter of a grain of iodine.

PULVIS SODÆ ARSENIATIS.

℞.—Sodæ arseniatis	gr. j.
Sacchari albi	gr. xlviij.

Misce bene, ut fiat pulvis; et divide in chartulas xxiv.

ne to be taken three times a day, *with meals;* the powder to be placed on the gue; for infants. The dose for adults should be $\frac{1}{12}$ or $\frac{1}{8}$ of a grain.

PILULÆ SODÆ ARSENIATIS, COMPOSITÆ.

℞.—Sodæ arseniatis	gr. ij.
Solve in aquâ destillatâ, q. s.	
Pulveris antimonii oxysulphureti	gr. xxiv.
Pulveris guaiaci	gr. xlviij.
Mucilaginis acaciæ, q. s.	

Misce bene, et divide in pilulas xxiv.

ne to be taken, *with meals*, three times a day.

PILULÆ QUINÆ ARSENITIS, COMPOSITÆ.

℞.—Quinæ arsenitis	gr. x.
Antimonii oxysulphureti	℈j.
Pulveris guaiaci	ʒj.
Mucilaginis acaciæ, q. s.	

Misce bene, et divide in pilulas xxiv.

ne to be taken, *with meals*, three times a day.

PILULÆ ARSENICI, QUINÆ, ET FERRI.

℞.—Sodæ arseniatis	gr. ij.
Quinæ disulphatis	gr. xij.
Ferri sulphatis	gr. vj.
Extracti anthemidis	ʒj.

Misce bene, et divide in pilulas xxiv.

ne to be taken, *with meals*, three times a day.

PILULÆ ARSENICI IODIDI.

℞.—Arsenici iodidi	gr. j.
Pulveris aromatici	gr. xxiv.
Mucilaginis acaciæ, q. s.	

Misce, et divide in pilulas xij.

ne to be taken, *with meals*, three times a day.

PILULÆ ARSENICI CUM OPIO.

Hebra's formula.

℞.—Acidi arseniosi	gr. j.
Pulveris opii	gr. iv.
Saponis duri, q. s.	

Misce bene, et divide in pilulas xvj.

Hebra prescribes two of these pills, night and morning; equal to a quarter of a grain of arsenic, and one of opium; and states that they have been continued for months with favorable results.

PILULÆ ARSENICI CUM PIPERE.

Asiatic pills.

℞.—Acidi arseniosi	ʒj.
Piperis nigri pulveris	℥x.
Pulveris glycyrrhizæ	℥iss.
Mucilaginis acaciæ, q. s.	

Misce bene, et divide in pilulas 800.

Each pill contains somewhat less than the $\frac{1}{14}$ of a grain of arsenic.

Mudar formula.

℞.—Arsenici protoxydi	gr. lv.
Piperis nigri	℥ix.
Asclepiadis giganteæ radicis corticis	℥iv.

Misce bene, ut fiant pilulas 800.

The arsenic and black pepper are to be well rubbed together, at intervals of time, for four days; the mudar and water are then added to form a mass. The dose of the pills is one twice a day; each pill contains about $\frac{1}{14}$ of a grain of arsenic.

SULPHUR REMEDIES.

SOLUTIO SULPHURIS CUM CALCE.

Liquor calcii pentesulphidi.

℞.—Calcis vivi	℥j.
Sulphuris sublimati	℥v.
Aquæ fontanæ	℥xx.

Boil for half an hour, and filter; making the quantity of fluid product ten ounces.
For scabies, alphos, psoriasis, &c.

Vlemingkx's formula.

℞.—Calcis vivi	℥ij.
Sulphuris sublimati	℥iv.
Aquæ fontanæ	℥xx.

Boil in an iron vessel, and stir with a wooden spatula to a perfect union.
For scabies.

Schneider's formula.

℞.—Calcis vivi	℥j.
Sulphuris sublimati	℥ij.
Aquæ fontanæ	℥xx.

Boil down to twelve ounces and filter.
For scabies.

UNGUENTUM SULPHURIS HYPOCHLORIDI, COMPOSITUM.

℞.—Sulphuris hypochloridi	ʒij.
Potassæ carbonatis	gr. x.
Unguenti benzoati	℥j.
Olei amygdalæ essentialis	♏ij.

Misce bene, ut fiat unguentum.

For gutta rosacea.

UNGUENTUM SULPHURIS IODIDI.

℞.—Sulphuris iodidi	gr. x–xx.
Unguenti benzoati	℥j.

Misce.

or sycosis, trichonosis, gutta rosacea, lupus erythematosus.

UNGUENTUM SULPHURIS CUM POTASSA.

℞.—Sulphuris sublimati	℥j.
Potassæ carbonatis	ʒij.
Unguenti benzoati	℥v.
Olei anthemidis essentialis	ʒss.

Misce, fiat unguentum.

or scabies; contains one part of sulphur in six; and is therefore less irritating n the Unguentum sulphuris of the B. P., which contains one part in five, but e active from the presence of an alkali.

Helmerich's formula.

℞.—Sulphuris sublimati	℥ij.
Potassæ carbonatis	℥j.
Adipis præparati	℥viij.

Misce, fiat unguentum.

or scabies; an active remedy, containing one part of sulphur in five, and one in ven of potash.

Hardy's formula.

℞.—Sulphuris sublimati	℥j.
Potassæ carbonatis	℥ss.
Adipis præparati	℥vj.

Misce, fiat unguentum.

or scabies; milder than Helmerich's pomade, containing one part of sulphur in en, and one part of potash in fourteen.

UNGUENTUM SULPHURIS CUM AMMONIA.

Alibert.

℞.—Sulphuris sublimati	℥iv.
Ammoniæ hydrochloratis	℥j.
Adipis præparati	℥viij.

Misce, fiat unguentum.

or scabies; too powerful for ordinary use.

UNGUENTUM SULPHURIS CUM ZINCI SULPHATE.

Unguentum sulphuratum, Austria.

℞.—Sulphuris sublimati,	
Zinci sulphatis	āā ℥j.
Adipis præparati	℥viij.

Misce, fiat unguentum.

For scabies.

Jaser's formulæ.

℞.—Sulphuris sublimati,	
Zinci sulphatis,	
Pulveris baccarum laurini	āā ℥ij.

Olei lini q. s. ut fiat unguentum.

℞.—Sulphuris sublimati	℥ss.
Zinci sulphatis	ʒiss.
Pulveris hellebori albi	℈j.
Saponis mollis	ʒxiij.
Adipis præparati	℥ij.
Olei carui essentialis	ʒss.

Misce, fiat unguentum.

For scabies.

UNGUENTUM SULPHURIS CUM HELLEBORO.

Unguentum sulphuris compositum, P. L.

℞.—Sulphuris sublimati	℥iv.
Veratri radicis contritæ	℥j.
Potassæ nitratis	ʒss.
Saponis mollis	℥iv.
Adipis præparati	℥xij.

Misce, fiat unguentum.

For scabies.

Vezin's formula.

℞.—Sulphuris sublimati	℥vj.
Pulveris hellebore albi	ʒij.
Potassæ nitratis	gr. x.
Saponis albi,	
Adipis præparati	āā ℥vj.

Misce, fiat unguentum.

For scabies.

UNGUENTUM SULPHURIS CUM ANTHEMIDE.

℞.—Unguenti anthemidis	℥vij.
Sulphuris sublimati	℥j.
Potassæ carbonatis	ʒss.

Misce, fiat unguentum.

For scabies; milder than the unguentum sulphuris cum potassâ and Hardy's formula, and well adapted for persons of sensitive skin and children.

UNGUENTUM SULPHURIS CUM PICE.

Wilkinson's formula.

℞.—Sulphuris sublimati,	
Picis liquidæ,	
Adipis præparati	āā ℥ij.
Cretæ precipitatæ	℥j.
Ammoniæ hydrosulphureti	ʒss.

Misce, ut fiat unguentum.

For trichonosis tonsurans.

Hebra's formula.

℞.—Sulphuris sublimati,	
Olei fagi seu cadini	āā ℥iij.
Adipis præparati,	
Saponis mollis	āā ℥viij.
Cretæ præparatæ	℥ij.

Misce, fiat unguentum.

For scabies.

UNGUENTUM SULPHURIS AROMATICUM.

Walter Dick's formula.

℞.—Olei laurini	℥iss.
Sulphuris sublimati	℥ss.
Pulveris camphoræ	gr. x.

Misce bene, ut fiat unguentum.

For trichonosis tonsurans.

Adolf's formula.

℞.—Sulphuris sublimati,	
Pulveris baccarum juniperi,	
Pulveris baccarum laurini,	
Adipis præparati	āā ℥ij.

Liquefac cum calore et cola, ut fiat unguentum.

For scabies.

UNGUENTUM SULPHURICI ACIDI.

Duncan's formula.

℞.—Acidi sulphurici	ʒss.
Adipis præparati	℥j.

Tere bene simul in mortario vitreo, ut fiat unguentum.

'or scabies.

UNGUENTUM SULPHURIS CUM SAPONE.

Mayssl's formula.

℞.—Sulphuris sublimati	ʒxiv.
Saponis domestici	℥ij.
Adipis præparati	℥viij.

Misce, fiat unguentum.

'or scabies.

LINIMENTUM SULPHURIS CUM GLYCERINA.

Bourguignon's formula.

℞.—Sulphuris sublimati	℥iij.
Potassæ carbonatis	℥j.
Glycerinæ puræ	℥vj.
Pulveris tragacanthæ	ʒj.
Olei lavandulæ,	
Olei caryophylli,	
Olei cinnamomi	āā ♏ xx.

Misce, fiat linimentum.

'or scabies.

SAPO SULPHURETI POTASSÆ.

Jadelot's formula.

℞.—Potassæ sulphureti	℥iij.
Olei olivæ	℥ij.
Saponis albi	ʒxvj.
Olei thymi	ʒj.

Misce, fiat sapo.

'or scabies.

SAPO SULPHURIS SULPHATIS.

Mollard's formula.

℞.—Sulphuris præcipitati	ʒx.
Sodæ sulphatis,	
Potassæ sulphatis	āā ʒxv.
Olei olivæ	℥iiss.

Misce, fiat sapo.

For scabies.

SAPO SULPHURIS ET AMMONIÆ.

Neuman's formula.

℞.—Sulphuris sublimati	ʒvj.
Ammoniæ hydrochloratis	ʒj.
Saponis mollis	ʒxvj.

Misce, fiat sapo.

'or scabies.

SAPO SULPHURIS SALINUS.

Emery's formula.

℞.—Sulphuris sublimati . . . . ℥viij.
Alcoholis . . . . ʒj.
Aceti vini . . . . ʒij.
Calcis hydrochloratis . . . . ℥ij.
Sodii chloridi . . . . ℥ss.
Saponis mollis . . . . ʒj.
Misce, fiat sapo.

For scabies.

SAPO SULPHURIS.

Bell's formula, 1865.

A hard soap, containing one-fifth part of sulphur.

For scabies; also useful as a cutaneous stimulant in acne and pruritus.

TAR REMEDIES.

TINCTURA PICIS.

℞.—Picis liquidæ,
Alcoholis . . . . aa ℥ij.
Misce.

TINCTURA PICIS CUM SAPONE.

℞.—Picis liquidæ,
Alcoholis . . . . aa ℥j.
Saponis mollis . . . . ℥ij.
Misce.

TINCTURA PICIS JUNIPERI CUM SAPONE.

℞.—Olei juniperi pyrolignici,[1]
Alcoholis . . . . aa ℥j.
Saponis mollis . . . . ℥ij.
Misce.

The tar-tinctures are useful in alphos, eczema chronicum, psoriasis, and trichonosis: diluted with water in the proportion of one or two ounces to the half-pint, they make useful antipruritic lotions, and in trichonosis they are improved in effect by the addition of carbolic acid, in the proportion of half a drachm to the ounce.

UNGUENTUM PICIS JUNIPERI.

℞.—Olei juniperi pyrolignici . . . . . . ℥j.
Adipis purificati . . . . ʒij.
Sevi ovilli purificati . . . . ʒvj.
Liquefac cum leni colore, ut fiat unguentum.

This ointment is an elegant preparation where tar in ointment is required; it may be used of the above strength or diluted.

UNGUENTUM PICIS CUM SULPHURE.

Guy's formula.

℞.—Picis liquidæ . . . . ℥viij.
Ceræ flavæ . . . . ℥ss.
Sulphuris sublimati . . . . ʒij.
Melt the wax and tar, and stir in the sulphur.

For trichonosis.

---

[1] An impure oleum juniperi pyrolignicum is termed "huile de cade," oleum cadinum.

SAPO JUNIPERI.

Bell's formula.

This soap, an admirable cutaneous stimulant, sedative, and detergent, contains 4 per cent. of the oleum juniperi pyrolignici.

SAPO LARICIS.

Moore's formula.

℞.—Saponis duri albi	℥xxiv.
Tritici furfurum	℥iv.
Glycerinæ purificatæ	℥iij.
Aquæ rosæ	℥xij.
Extracti corticis larici	ʒss-j.

Misce.

Useful in alphos and psoriasis.

SAPO ACIDI CARBOLICI.

Bell's formula, 1866.

An useful cutaneous and antipruritic stimulant, containing 7 per cent. of carbolic acid.

LOTIO ACIDI CARBOLICI.

℞.—Acidi carbolici	ʒss-j.
Glycerinæ purificatæ	℥ss.
Aquæ destillatæ	℥viiss.

Misce.

For trichonosis, chloasma, and pruriginous affections.

OINTMENTS.

UNGUENTUM BENZOATUM.

℞.—Adipis purificati	℥vj.
Gummi benzoini, pulveris	ʒj.

Tere simul, dein liquefac cum leni calore, per horas viginti quatuor, in vaso clauso, et cola per linteum.

This ointment, which, with the addition of oxide of zinc, is the benzoated ointment of oxide of zinc, may be used alone, or combined with other substances; or, it may be used with advantage to dilute other ointments, tending to preserve them from rancidity, as well as communicating an agreeable odor.

UNGUENTUM OXYDI ZINCI, BENZOATUM.[1]

Bell's formula, 1854.

℞.—Adipis preparati	℥vj.
Gummi benzoini, pulveris	ʒj.

Liquefac, cum leni calore, per horas viginti quatuor, in vaso clauso; dein cola per linteum, et adde

Oxydi zinci, purificati	℥j.

Misce bene, et per linteum exprime.

UNGUENTUM OXYDI ZINCI, BENZOATUM, CUM SPIRITU VINI.

℞.—Unguenti oxydi zinci, benzoati	℥ij.
Spiritûs vini rectificati	ʒij.

Misce, ut fiat unguentum.

Instead of spirits of wine, spirits of camphor, distilled glycerine, liquor plumbi diacetatis, Peruvian balsam, or the juniper-tar ointment, may be combined with the benzoated ointment of oxide of zinc, in the same proportion as above, one drachm to the ounce.

---

[1] *Vide* Pharmaceutical Journal, vol. 14, page 207; November 1, 1854.

ALBI.

. . . ℥j.
. . . . ℥iv.
. . . . ♏ xx.

SAGRIÆ.

For

. . . . . ℥iij.
. . . . . ℥v.

a temperature of 212°, and strain
any other.

For

. . . . . . ℥iss.
. . . . . ʒij.
. . . . . . ʒij.

ANTHEMIDIS.

. . . . . . ℥iv.
. . . . . . ℥viij.

212°, and strain. For scabies in infants.
ment in cases of irritable skin.
essential oil.

CORROSIVI SUBLIMATI.

. . . . . . gr. x.
. . . . . . no. j.
. . . . . . ʒj.

and the yelk, and then add the lard.

ARGYRI IODIDI RUBRI.

. . . . ʒss.
. . . . ℥j.

ointment are powerful stimulants, and
iermata. The hydrargyri iodidum
in the same proportion as the iodide.

PLUMBI IODIDI.

. . . . ʒij.
. . . . ℥j.

ENTUM STIMULANS.

. . . . ʒvj.
. . . . ℥iij.

per horas viginti quatuor, et per chartam bibulam

for use in its present state, and when required as a
mixed by means of any agreeable pomatum,
of one part, to four or eight of the diluting medium.

UNGUENTUM TRICHOGENOSUM.

℞.—Unguenti stimulantis	ʒij.
Butyri cacaonis theobromatis	℥ij.
Butyri jasmini	℥ss.
Adipis odorati	℥j.

Misce bene, ut fiat unguentum,

For alopecia ; to be well rubbed among the roots of the hair daily, after thoroughly brushing the head.

Dupuytren's formula.

℞.—Purified beef marrow	℥j.
Acetate of lead	ʒj.
Peruvian balsam	ʒiij.
Tincture of cantharides	ʒj.
Essential oil of cloves and canella	āā ♏ xv.

Misce bene, ut fiat unguentum.

Gibert's formula.

R.—Medullæ bovinæ præparatæ	ʒvj.
Olei amygdalæ	ʒij.
Pulveris cinchonæ flavæ	ʒj.

Misce, ut fiat unguentum.

GLYCYRIA.[1]

GLYCYRION AMYLATUM.

℞.—Glycerinæ purificatæ	℥viij.
Pulveris amyli	℥j.

Rub the starch in a mortar with a portion of the glycerine until perfectly smooth, and add the remainder of the glycerine. Heat gradually to a temperature of 240°, and keep constantly stirred. The preparation is a jelly-like transparent paste, to be used alone or as a vehicle for other remedies.

GLYCYRION IODATUM.

Dr. Gage, U.S.

℞.—Glycerinæ purificatæ	℥ij.
Potassii iodidi,	
Iodinii	āā ʒj.

Misce.

A powerful stimulant, applicable to lupus vulgaris and erythematosus.

LOTIONS.

LOTIO HELLEBORI ALBI, P.L.

℞.—Pulveris radicis hellebori albi	℥j.
Aquæ fontanæ	℥xxxij.
Boil down to ℥xvj., strain, and add	
Spiritus vini rectificati	℥ij.

For scabies.

LOTIO SODÆ HYPOSULPHITIS.

℞.—Sodæ hyposulphitis	ʒiv.
Acidi carbolici	ʒss.
Aquæ lavandulæ spicatæ	℥j.
Aquæ destillatæ	℥viss.

Misce.

For chloasma.

---

[1] The term glycyrion was suggested by Dr. Frederic Farre as a designation of compounds of glycerine and appears to us to be so admirably suited to the purpose, that we have not hesitated to adopt it.

LOTIO HYDRARGYRI BICHLORIDI.

℞.—Amygdalarum amarum	no. xx.
Aquæ destillatæ	℥vj.
Contunde et tere simul dein cola et adde	
Hydrargyri bichloridi	gr. xvj.
Spiritûs vini rectificati	℥ij.
Misce, ut fiat lotio.	

For acne and gutta rosacea.

LOTIO CAPILLARIA STIMULANS.

℞.—Olei amygdalæ dulcis	℥j.
Liquoris ammoniæ fortius	℥j.
Spiritûs rosmarini	℥iv.
Aquæ mellis	℥ij.
Misce, fiat lotio.	

For alopecia.

Bateman's formula.

℞.—Olei macis	℥ss.
Spiritus vini rectificati	℥viij.
Misce, fiat lotio.	

For alopecia areata.

LOTIO CAPILLARIA REFRIGERANS.

℞.—Olei amygdalæ dulcis	℥ss.
Sodæ biboratis	℈j.
Aquæ florum aurantii	℥iss.
Aquæ destillatæ	℥vj.
Misce, fiat lotio.	

For alopecia.

SPIRITS AND TINCTURES.

SPIRITUS SAPONATUS KALINUS.

Hebra's formula.

℞.—Saponis mollis	℥ij.
Alcoholis	ʒj.
Misce, et cola.	

For alphos.

SPIRITUS SAPONATUS IODIDUS.

℞.—Saponis mollis,	
Alcoholis	āā ℥j.
Potassii iodidi	ʒij.
Misce.	

For scrofulodermata and strumous swellings.

TINCTURA ÆTHERIALIS IODINII ET MASTICHES.

Dr. Thomas Smith Rowe's formula.

℞.—Spiritûs vini rectificati	ʒv.
Ætheris sulphurici	ʒiij.
Misce: et adjice,	
Gummi mastiches	gr. xxv.
Solve et cola, dein adde,	
Iodinii	℈ij.
Fiat solutio.	

This solution will be found to be a valuable application for scrofulous tubercles eruptions, and for the tubercular forms of lupus and elephantiasis. The mas creates a varnish-like film on the skin, which detains the iodine, and facilitates absorption.

TINCTURA CROTONIS TIGLII.

℞.—Seminum contusorum	℥j.
Spiritûs vini rectificati	℥iv.

Macera per dies quatuordecim et cola.

A valuable cutaneous stimulant in chronic irritation and thickening, as also in languid innervation.

TINCTURA CAPSICI, FORTIOR.

Turnbull's formula.

℞.—Capsici	℥j.
Spiritûs vini rectificati	℥iij.

Macerate for a week, and strain.

For erythematous chilblains; to be applied with gentle friction by means of a piece of sponge.

DECOCTUM ZITTMANNI.

Strong.

℞.—Radicis sarsæ concisæ	℥xij.
Aquæ fontanæ	libris lxxii.

Digest for twenty-four hours; then add, tied up in a piece of linen—

Sacchari albi,	
Aluminis	āā ʒvj.
Calomelanos	ʒiv.
Antimonii sulphureti	ʒj.

Simmer down to twelve quarts; towards the close of the simmering add—

Seminum anisi, contus:	
Seminum fœniculi, contus:	āā ℥ss.
Foliorum sennæ	℥iij.
Radicis glycyrrhizæ, concisæ	℥iss.

Press and strain, and, after standing until cool, decant the clear liquid, and bottle twelve quarts.

Weak.

To the dregs of the strong decoction add—

Radicis sarsæ concisæ	℥vj.
Aquæ fontanæ	libris lxxii.

Simmer down to twelve quarts, and towards the close of the simmering add—

Corticis fructûs citri, contusi,	
Cardamomum minorum, contus:	
Radicis glycyrrhizæ, concisæ	āā ʒiij.

Squeeze and strain, and, after standing until cool, decant the clear liquid, and bottle twelve quarts.

One bottle of the stronger decoction is to be taken *warm*, before twelve o'clock in the day; and one bottle of the weaker decoction *cold*, between twelve o'clock and bedtime. It has been suggested that the mercurial and antimonial salts contained in the linen bag are useless, as undergoing no solution in the liquid. This may be the case, but we have fancied that the remedy answered better when prepared in accordance with the old formula than in a mutilated form. The treatment is commenced with an active purge of calomel (gr. iv) and colocynth (gr. viij); and if the action of the bowels be sluggish, the purgative should be repeated in the evening of the fourth day.

CAUSTICS.

ACID CAUSTICS.

The concentrated nitric or sulphuric acid may be made into a paste by admixture with sulphur sublimatum; a wooden or glass spatula must be used for the purpose, and the caustic applied with an instrument of similar material.

Rivallié produces a solidified nitric acid by the combination of the latter with scraped lint. **Maisonneuve** prefers asbestos to scraped lint as the solidifying material.

A "caustique noir" is formed by the admixture of concentrated sulphuric acid with saffron, and is extolled by **Velpeau** and **Maisonneuve**.

The acid nitrate of mercury; hydrargyri nitratis liquor acidus, of the British Pharmacopeia, must also be enumerated amongst the acid caustics.

For carcinoma and lupus.

ALKALINE CAUSTICS.

POTASSA CAUSTICA CUM CALCE.

Vienna paste.

℞.—Potassæ causticæ	ʒv.
Calcis hydratis	ʒvj.

Tere bene simul, ut fiat pulvis.

To be mixed with rectified spirits of wine to the consistence of a thick paste, when required for use.

Filho's caustic.

The potassa cum calce, consisting of two parts of caustic potash to one of lime, in solid stick, is also an admirable caustic.

For carcinoma and lupus.

SODA CAUSTICA CUM CALCE.

Dr. Morell Mackenzie's caustic.

℞.—Sodæ causticæ,
Calcis hydratis. partes æquales,
Tere simul, ut fiat pulvis.

To be mixed with water to a proper consistence.

CHLORIDE OF ZINC CAUSTIC.

Canquoin's paste.

℞.—Zinci chloridi,	
Farinæ tritici	āā ʒj.
Aquæ guttarum	v–x.

Mix into a paste of convenient consistence.

This caustic requires the previous removal of the epidermis; and when applied upon a cancerous tumor in a layer a quarter of an inch in thickness, destroys the tissues beneath it to the depth of an inch in forty-eight hours. For lupus it should be diluted to the extent of one part of chloride of zinc to two or three of flour, and is then both slower in its operation, and less painful.

CHLORIDE OF ZINC WITH ANTIMONY.

Canquoin's formula.

℞.—Zinci chloridi,	
Antimonii chloridi	āā ʒj.
Farinæ tritici	ʒiss.
Aquæ guttarum	v–x.

Mix to a paste of the consistence of soft wax.

For carcinoma and lupus.

CHLORIDE OF BROMINE CAUSTIC.

Llandolfi's paste.

The chloride of bromine is either used alone, made into a paste with liquorice powder, or according to the following formula:—

℞.—Bromini chloridi	ʒiij.
Zinci chloridi	ʒij.
Antimonii chloridi	ʒj.
Auri chloridi	ʒj.

Misce.

These substances are sometimes used in equal proportion; and in either case are mixed with wheaten flour to the consistence of a paste.

purity, and only differing, to all appearance, in their tint of color. We have always given a preference to the ointment made with the buff oxide, without knowing why; but Mr. Schweitzer, in his remarks, helps us to an explanation. "Fats and oils," he says, "when in contact or mixed with metallic oxides, soon turn rancid, a circumstance which gave dispensing chemists a great deal of trouble with seemingly quite simple and unimportant articles of their stock, namely, a few ointments, amongst which the unguentum zinci, the most delicate and nicest looking, may well be said to be the principal one. All animal substances will only keep good for a limited space of time, and such preparations as pomatums and ointments may fairly be said to be subject to certain deterioration by age; nevertheless it was a well-observed fact, that some of the French pomatums retained their original sweetness for an almost unlimited space of time, the cause of which was long a mystery desirable to be ascertained. At last it became known that this property was due to an addition of gum benzoin, or benzoic acid, a proceeding which in one instance we had already adopted. In the preparation of those singular looking little bottles of pomatum known under the name of 'Pomade divine,' amongst a host of other ingredients, we are directed to digest gum benzoin with the fat at a gentle heat for about forty-eight hours. But it was left to the late Mr. Bell to draw our attention particularly to the preservative property of the gum benjamin, of which he proposed to avail himself in the preparation of an unguentum zinci benzoatum. This proposition was eagerly accepted, and medical men and chemists will still remember Mr. Bell by this, one of his last improvements in pharmaceutical chemistry—the unguentum zinci benzoatum.

"This ointment is made by selecting the best and most fragrant gum benzoin, the so-called benzoin in tears; this, when comminuted, is added to good fresh lard, in the proportion of ten grains to the ounce, and the whole digested in a water bath for about forty-eight hours; this, subsequently strained, is used for the preparation of the benzoated zinc ointment.

"In making this ointment with two oxides of zinc, a difference of reaction will be observed between the oxide made by combustion and that made according to the Pharmacopœia, which, slight as it may be, deserves nevertheless some attention. The buff-colored oxide of the Pharmacopœia seems readily and speedily to amalgamate with the benzoated lard, so much so as sometimes to impart to the whole still warm fluid a certain consistency, which in far greater degree becomes more observable when the ointment is cold. Subsequent experiments showed that the seemingly lighter oxide of combustion resists with greater effect the influence of weaker acids, while the dense oxide of the Pharmacopœia is readily dissolved by them.

"This chemical difference is in all probability the cause of the different behavior of these two oxides when used for the unguentum zinci benzoatum. Benzoic acid is readily dissolved by fats and oils; and in digesting the gum for some time with the lard, this acid, as well as the aromatic principles, impregnates the fat, and subsequently acts on the zinc. How far this greater susceptibility to weak acids may render it a beneficial application to a wound is a surgical question; but it is a well-known fact that many of the most skilful and eminent surgeons always prefer the buff-colored zinc ointment to the perfectly white one made with the new oxide of zinc of combustion."

Although of British origin, the unguentum benzoatum has not as yet been adopted by any British Pharmacopœia; but the United States of America have had the wisdom to introduce it into their Pharmacopœia of 1863, under the name of "unguentum benzoini," and have given as their formula for preparing it one part of gum benzoin to sixteen of lard, with an exposure to heat in a water bath of two hours.

CHAPTER XXIX.

GLOSSARY OF DERMATOLOGICAL TERMS.

ACHOR; αχωρ, scurf, dandruff, or dandriff; αχυρον, meaning "chaff." According to Willan achor is "a small acuminated pustule, containing a straw-colored matter, which has the appearance and nearly the consistence of strained honey, and is succeeded by a thin brown or yellowish scab;" but, looking to the derivation of the term, it would seem to be applicable to the scab rather than to the mature stage of the pustule; in the former sense it is, according to the same author, a constituent of porrigo. Willan's definition of achor corresponds with the pustule of kerion; the term, however, has fallen into disuse.

ACHORION, derived from "achor;" is the name of the dermatophyte of favus, achorion Schœnleinii.

ACHROMA; αχρωμος, Hippocrates; colorless; an absence of pigment in the skin.

ACNE; ακμη, flos ætatis; a disease of puberty, associated with the development of the hair, and affecting the follicles of the face, breast, and back. Dr. Greenhill remarks that the word "acne" owes its origin to a typographical error occurring in Ætius. The proper term is ακμη, or rather the plural of acme, namely ακμαι.

ACROCHORDON; ακροχορδων, Hippocrates, Celsus; ακρον, a point or end; χορδη, a cord; an elongated wart with a narrow neck; a pedunculated wart.

ACRODYNIA; ακρον, the extremity, οδυνη, pain; a term applied by Alibert to an epidemic erythema of the hands and feet, attended with burning heat and pain.

ACROTICA; one of the orders of the class eccritica of Mason Good, embracing "diseases of the external surface." Mason Good derives the term from ακρος, summus, and ακροτης, summitas, and groups under it ten genera, namely, ephidrosis, exanthesis, exormia, lepidosis, ecphlysis, ecpyesis, malis, ecphyma, trichosis, and epichrosis.

AGNAIL; from the Saxon word *ange*, angry; the term is applied to the shreds of epidermis which separate from the skin covering the root of the nail, and which, on being torn, give rise to a painful state of the finger.

AGRIA; αγριος, angry, fierce, raging, violent; *e. g.*, lichen agrius, a form of eruption remarkable for the violence of its itching; and, at the same time, the severest degree of the disease.

ALBINISMUS; albus; white; albinism; a bleached state of the skin.

ALLOSTEATODES; αλλος, στεατωδης; altered sebaceous secretion; a term embracing the morbid changes of the sebum or sebaceous substance.

ALOPECIA; αλωπεκια, Aristotle, Galen; from αλωπηξ, a fox: a state of baldness, resembling the loss of hair, as seen in a fox suffering from the mange. The term alopecia ungualis is applied to the loss of the nails.

ALPHOS; αλφος, from αλφιτον, the dull white leprosy; white, like barley-meal; alphos being akin to albus. Alphos is the Boak of the Hebrews and Arabians; the lepra alphos of the Greeks; the vitiligo alphos of Celsus; and the lepra of Willan. Its non-contagiousness, as compared with the true leprosy, is testified by the Greek translation of the Bible; Leviticus, chapter 13, verse 39, as follows, αλφος εστι εξανθει εν τω δερματι της σαρκος αυτου, καθαρος εστιν; "it is a freckled spot that groweth in the skin; he is clean."

ALPHOSIS; αλφωσις, whiteness; alphosis is one of the species of Mason Good's genus, epichrosis; which he terms albino-skin; the equivalent of albinismus and leucodermæ.

AMBUSTA; participle of the verb *amburere*, to burn; blisters caused by burn or scald.

ANÆMIÆ; αναιμια, want of blood; the title of Hebra's second class of cutaneous diseases.

ANÆSTHESIA; from α, want or absence of; αισθησις, sensation. The term αισθησια, is used by Aretæus.

NGIECTASIA; *αγγεια*, vessels; *εκτασις*, extension; extension of hypertrophy of the capillaries and minute vessels of the skin; hence angiectasia capillaris, a term applicable to several forms of vascular nævus.

NGINA; from *αγχω*, to strangle; hence the Latin word *ango*, having the same signification.

NIDROSIS; from *α*, *ιδρωσις*, perspiration; *ιδροω*, to perspire; absence of perspiration.

NTHRAX; *ανθραξ*, Hippocrates; a coal or carbuncle; possibly significative of its coal-black color, or of its resemblance to the precious stone termed "carbuncle." It is also expressive of a burning coal, "carbo, in quo *ανθει*, id est floret ignis."

PHTHA; *αφθα*, *αφθαι*, Hippocrates, Galen; an eruption occurring in the mouth.

RCTURA UNGUIS; *arcere*, to hold together, to contract; a narrow and contracted nail.

REA; Celsus; a void or bald place, from *areo*, to be dried up; a form of baldness, alopecia areata, in which the hair falls off in patches, leaving pale, smooth, denuded spots, generally circular. *Vide* ophiasis.

RGYRIA; *αργυρος*, silver; the slate-colored stain of the skin produced by the internal use of the salts of silver.

STEATODES; *α*, *στεατωδης*, want or absence of sebaceous secretion.

TELECTASIA; *ατελης*, infinite, *εκτασις*, extension; applied to the vascular system of the skin, the term signifies general or universal extensibility, such as takes place in the distension of the capillaries, in some forms of vascular nævus, and also in cyanosis.

THEROMA; Celsus; *αθάρα*, *αθάρη*, *αθηρη*, meal-porridge; an encysted tumor filled with a matter consisting of altered sebaceous substance, and resembling meal-porridge in appearance.

THRIX; *α*, *θριξ*, hair; deficient hair; a term synonymous with baldness.

TROPHIA; *α*, *τρεφω*, to nourish; Aristotle, Theophrastus; want of, or deficient nourishment.

ACCHIA; Bacchus, god of wine; a term applied to gutta rosacea, from its supposed origin in excess of alcoholic stimulants; the word is ascribed to Linnæus; Plenck includes amongst his varieties of that disease, gutta rosacea œnopotorum.

ERAT; the Hebrew term for leprosy, signifying a "bright spot." The Hebrews distinguished three varieties of berat, namely: 1. Boak, the dull white leprosy, a harmless variety of the disease; the Boak of the Arabians; lepra alphos of the Greeks; vitiligo albida of the Latins; and lepra of Willan. 2. Berat lebena, the bright white leprosy; beras bejas of the Arabians; lepra leuce of the Greeks; vitiligo candida of the Latins; one of the synonyms of elephantiasis Græcorum. 3. Berat cecha, the dark or black leprosy; beras asved of the Arabians; lepra melas of the Greeks; vitiligo nigricans of the Latins; another synonym of elephantiasis Græcorum. The second and third variety, appertaining to a more malignant disease than the Berat boak, were distinguished by the expression "tsorat," signifying "venom or malignity." In Leviticus, chapter xiii. v. 2, berat is translated in the Septuagint, *λευκη*; and, in the English version, "a bright spot," that is, a smooth and glossy spot.

BLACTIÆ, a synonym of measles.

BLAIN; a blister, as in the case of chilblain. Mason Good defines "blains" as "orbicular elevations of the cuticle, containing a watery fluid."

BOAK; dull white spot; the Hebrew and Arabic term for the lepra alphos of the Greeks; the vitiligo albida of the Romans; and the lepra of Willan. The term occurs in Leviticus, chap. xiii. v. 39, and is translated *αλφος* in the Septuagint; and "a freckled spot" in the English translation of the Bible.

BROMIDROSIS; *βρωμος*, a stink, especially of beasts at rut, Dioscorides; *ιδρωσις*, perspiration; fetid perspiration; synonymous with osmidrosis.

BUCNEMIA; **BOUCNEMIA**; *βου*, huge or monstrous; *κνημη*, the leg; the form of hypertrophy of the lower extremity, called by the Arabians *dal fil*, the elephant leg; by the Greeks, elephantiasis Arabum; and, by ourselves, the Barbadoes or Cochin leg, from the frequency of its occurrence in those countries.

BULLA; *bulla*, a bubble; such as is formed on the surface of water by the fall of rain or by boiling. The diminutive of bulla is bullula

BULLÆ; the title of Willan's fourth order; including as genera, erysipelas, pemphigus, and pompholyx.

Cacochroia; κακοχροια, Galen; a bad color or complexion; Hippocrates uses the term κακοχροος; sallowness and pallor with discoloration of the skin.

Cacochymia; κακοχυμια, Galen; bad juices; a morbid condition of the skin, due to an unhealthy state of its fluids.

Cacotrophia; κακοτροφος, ill-fed, from κακοτροφεω, to nourish badly; an ill-nourished state of the skin. Theophrastus, A.C. 322, uses the term as expressive of "bad food."

Callus; hardness of the cuticle, as produced by pressure and friction; a corn. The term callosity is used in the same sense.

Calvities: baldness; from *calvus*, bald.

Cancrois; from καρκινος, cancer; a synonym of kelis.

Canities; *canus*, hoary, gray-haired; whiteness or grayness of hair.

Carate; probably from the Portuguese word carão, complexion; a partial leucasmus endemic on the western coast of South America, and especially in New Granada and Peru.

Carbunculus; Galen, Celsus; diminutive of carbo, a coal or burning coal; synonymous with anthrax. The name of an aggravated form of boil, distinguishing probably its black appearance and burning nature.

Carcinoma; καρκινωμα, καρκινος; Hippocrates; an eating sore, a cancer.

Chalazion, χαλαζιον, from χαλαζα, hail; a small, hard, and transparent encysted tumor of the eyelids, resembling in appearance a hailstone.

Chaps; clefts, gaps, or chinks in the skin; such as occur on the back of the hands and wrists in cold weather, erythema a gelu; also in psoriasis and alphos.

Chelois; χηλη, a crab's claw; a term applied to kelis from the resemblance of one of its varieties to the bifid claw of the crab.

Chicken-pox; from the word *chiches*, chick-pease; a small pulse less than a pea; a diminutive pock. In French the word *chiches* has a similar signification, the *cicer* of the Latins. The Spanish word *chico*, and the Italian *chichino*, signify, little, petty.

Chilblain; a blain or blister caused by the cold; the chilblain presents three stages, erythematous, vesicular, and gangrenous.

Chloasma; χλοασμα, that which is green; Hippocrates. A stain of the skin of a greenish hue; the pityriasis versicolor of Willan; chloasma pigmentosum.

Chromatogenesis; χρωμα, color; γενεσις, generation. The production of color.

Chromidrosis; χρωμα, color; ιδρωσις, perspiration. Colored perspiration; the ephidrosis discolor of Mason Good.

Chrystalli; crystalli; a synonym of varicella, from the crystal transparency of the vesicles; variolæ chrystallinæ, Ingrassias.

Cingulum; a girdle; the Latin name for herpes zoster, so called from encircling a certain extent of the circumference of the body.

Cirones, sirones, and cyrones; synonyms of acari; applied to the acari scabiei.

Clavus; a round knob or stud; a term applied to a corn. Celsus writes, "clavus nonnunquam etiam alibi, sed in pedibus tamen maxime nascitur."

Cnidosis; κνιδωσις, Hippocrates; an itching like that caused by the nettle, κνιδη. Κνιδη is derived from κνασιν, to itch; another term for the nettle is κνηφη, hence the word κνησμος, a synonym of pruritus. Cnidosis is a designation of urticaria.

Comedones; from *comedo*, to eat up, to devour like grubs, a term applied to the so-called grubs of the skin; the little cylindrical accumulations of sebaceous matter in the sebiferous follicles.

Couperose; a French synonym of gutta rosacea; a face cut up or disfigured with roseate blotches.

Crinones; a synonym of comedones; probably from *crinis*, a hair, in consequence of their hair-like figure when expressed from the follicles.

Crusta lactea; milk-crust; the name given to the incrusted stage of eczema pustulosum or impetiginosum, as it occurs upon the face of infants during the period of lactation.

Cyano-derma; κυανεος, blue. A blue discoloration of the skin.

Cyanopathia; κυανεος, blue; παθος, disease; the blue disease, morbus cœruleus.

Cyanosis; a synonym of cyanopathia or morbus cœruleus.

DANDRUFF OR DANDRIFF; derived from two Saxon words signifying "itch" and "foul." An itching foulness or scurfiness, commonly of the head, as in pityriasis and psoriasis capitis.

DARTRE; the French equivalent of the English word *tetter*;. apparently derived from δερειν, to skin or flay; hence δαρτος, skinned or flayed; therefore, an abrasion or excoriation, or skinning as in desquamation. Dartre is the popular appellation of all the more common affections of the skin, as is tetter in English; but the term has also been adopted by some French authors as a scientific denomination of a group of cutaneous diseases, including eczema, alphos, lichen, and pityriasis. Hence also, the expression "dartrous diathesis," a tendency to the production of dartres.

DERMAPOSTASIS; δερμα, the skin; αποστασις, a standing away from; a swelling or enlargement.

DERMATALGIA; αλγος, pain; pain of the skin.

DERMATOLYSIS; δερμα, the skin; λυσις, loosening, looseness; λυειν, to make loose. Looseness of skin, the skin hanging in folds; Alibert describes five varieties of dermatolysis: palpebralis, facialis, collaris, abdominalis, et genitalium.

DERMATONOSIS; νοσος, disease; disease of the skin.

DERMATOPHYTON; φυτον, a plant; a cutaneous plant; diseases in which a plant-like structure is found are termed dermatophyta.

DERMATOSPASMUS; σπασμος, spasm; spasm of the skin produced by contractility of its muscular structure, as in spasmus periphericus and urticaria; spasm of the skin is seen in operation in the scrotum.

DIAPOMPHOLYGOS; δια, through; πομφολυξ, a bubble; the slag or scoriæ left on the surface of melted metal; an oxide of the metal. Daniel Turner gives this name to oxide of zinc.

DYSCHROMA; δυσχρωμα, of a bad color; Hippocrates. Discoloration; dyschromatoderma; discoloration of the skin.

DYSCRASIS; δυσκρασια, bad temperament; κρασις signifies the mixing or blending of two things so that they form a perfect compound, as in chemical combination, or in the composition of the blood.

ECCHYMOMA; εκχυμωμα, Hippocrates; extravasation of blood, hence the term ecchymoma unguis.

ECCHYMOSIS; εκχυμωσις, Hippocrates; extravasation of blood.

ECCRITICA; εκκρισις, Aristotle; secretion; from εκκρινω, to secrete; the title of Mason Good's sixth class of diseases, namely, affections of the secreting system, of which he has three orders: mesotica, affecting the parenchyma; catotica, affecting the internal surface; and acrotica, the external surface, *vide* acrotica; the two first genera of mesotica are, polysarcia and emphyma.

ECPHLYSIS; εκφλυσις, Galen; εκφλυω, to burst forth; the fifth genus of the class "eccritica" of Mason Good; "blains," that is "orbicular elevations of the cuticle containing a watery fluid;" a vesicular eruption confined in its action to the surface, in contradistinction to emphlysis, which is connected with "internal and febrile affection." Ecphlysis includes four species, namely, pompholyx, herpes, rhypia or rupia, and eczema.

ECPHYMA; εκφυμα, Hippocrates; εκφυω, to generate or beget; an eruption of pimples. Ecphyma is the eighth genus of the class eccritica of Mason Good; "cutaneous excrescences, superficial permanent indolent extuberances, mostly circumscribed," including four species, namely, caruncula, verruca, clavus, and callus.

ECPYESIS; εκπυησις, Hippocrates; suppuration; from εκπυειν, to bring to suppuration. Mason Good takes ecpyesis as a genus, corresponding with the "pustulæ" of Willan, including four species, namely, impetigo, porrigo, ecthyma, and scabies.

ECTHYMA; εκθυμα, a pustule or pimple; from εκθυειν, to break out as an eruption. "Apertum est ab εκθυειν, quod est εξορμαν, id est, *erumpere*, derivatum esse; εκθυμασι, id est, *papulis*, nomen in iis quæ sponte extuberant in cute." Hippocrates, lib. 8, sec. 51.

ECTROTIC; εκτρωσις, Hippocrates; miscarriage; εκτιτρωσκειν, to cause to miscarry. The term is used to express the miscarriage or arrest of the normal course of a pustule, as in the instance of smallpox. A point of nitrate of silver inserted into the vesicle of variola checks its further progress, and is therefore an ectrotic remedy.

ECZEMA; εκζεμα, Dioscorides Phocas, Ætius; εκζειν, to boil out or over; anything thrown out by heat.

ELEPHANTIASIS; ελεφαντιασις, Celsus, Aretæus, Galen, Plutarch; ελεφας, an elephant; the elephant disease, from the resemblance of the skin to the elephant's hide, or from the progress of the disease as implicating the whole body. This term was probably suggested to the Greeks by the Arab word, da ool fil, the elephant disease; and applied to the affection already known to them by the terms lepra leuce and lepra melas. The Arabians recognized by dal fil a different disease, namely, bouenemia tropica, the Barbadoes leg. Hence we distinguish as separate diseases the elephantiasis Græcorum, or lepra, and elephantiasis Arabum, or bouenemia.

EMPHLYSIS; εμφλυσις, Hippocrates; εν, in; φλυσις, a breaking out of eruption; from φλυειν, to bubble or boil over. Mason Good defines emphlysis to be an "ichorous exanthem," distinguished by the presence of an internal and febrile affection, and treats it as a genus containing as species, miliaria, aphtha, vaccinia, varicella, pemphigus, and erysipelas.

EMPHYMA; εμφυμα, Hippocrates; εν, in; φυμα, a growth, swelling, tumor, boil; from φυειν, to grow, to spring up. Mason Good defines emphyma as a tumor originating below the integument, and treats it as a genus including encystis, encysted tumor or wen; the selection is unfortunate, for encystis is a hypertrophy of a follicle or gland, and is produced in and not below the skin.

ENANTHESIS; ενανθησις, Theophrastus; εν, in; ανθησις, a blossoming; from ανθειν, to blossom; a blossoming from within. Mason Good makes it a genus, "rash exanthem," which he defines "as an efflorescence from within, or from internal affection," "fever accompanied with rash," and includes as species, rosalia or scarlet fever, rubeola, and urticaria.

EPHELIS; εφηλις, Hippocrates, Celsus; επι, upon; ηλιος, the sun. A sun spot, or spot occasioned by the sun; *e. g.*, sunburn, freckle, &c.

EPHIDROSIS; εφιδρωσις, Hippocrates; εφιδρωειν, to perspire slightly. A state of moderate perspiration. Ephidrosis is the first genus of the order acrotica, of the class eccritica of Mason Good; the species being six in number, namely, profusa, cruenta, partialis, discolor, olens, and arenosa, or sandy sweat.

EPICHROSIS; επιχρωσις, Theophrastus; επι, upon, χρωσις, a coloring. A surface stain. Mason Good distinguishes it as a genus, a "macular stain," and includes under it seven species, namely, leucasmus, spilus, lenticula, ephelis, aurigo or orange stain, pæcilia or pie-bald stain, and alphosis or albino-skin.

EPIDERMINOSIS; επιδερμις, Hippocrates; νοσος, disease; disease of the epidermis.

EPIDERMOPHYTON; φυτον, a plant; the plant or fungus of the epidermis. A term given to the dermophyte of chloasma, the microsporon, by Bazin.

EPINYCTIS; επινυκτις, Celsus; επι, upon; νυξ, night; a pustule which rises during the night, and is most painful at that period; ετι νυκτωρ εγενετο, quoniam noctu oritur.

EQUINIA; *equus, equinus;* the equine disease, glanders and farcinoma; a term first used by Elliotson.

ERYSIPELAS; ερυσιπελας, Hippocrates, Celsus; ερυθρος, red; πελλα, skin. Redness of the skin.

ERYTHEMA: ερυθημα, Hippocrates; ερυθαινειν, to blush, to become red. Redness of the skin.

ESCHARA; εσχαρα, Hippocrates; the hearth or fire-place. A scab caused by burning; eschar. One of the genera of Crustæ of Plenck

ESSERA OR ESHERA; Arabic; urticaria; also, lichen tropicus, or prickly heat.

ESTHIOMENON; τα εσθιομενα, Hippocrates; εσθιειν, to eat; an eating sore; a synonym of lupus excedens; which Hippocrates terms herpes esthiomenos.

EXANTHEMA; εξανθημα, Hippocrates, Celsus; εξ, out; ανθος, a bud or flower. A breaking out or eruption; literally, a blossoming forth. Exanthemata is the title of Willan's third order.

EXANTHESIS; εξανθησις, Hippocrates; the same in derivation and signification as exanthema; a genus of eccritica of Mason Good, containing the single species, roseola: exanthesis roseola.

EXORMIA; εξορμη, a breaking out; εξορμησις ιδρωτων, breaking out into a perspiration, Theophrastus; εξορμαειν, to send forth. Exormia is the "papulous skin" of Mason Good. his third genus of eccritica, and contains strophulus, lichen, prurigo, and milium.

EXUDATA; *ex sudare*, to sweat out, to exude; the designation of Hebra's fourth class, exudative diseases, which includes the exanthematous, erythematous, vesicular, pustular, and squamous eruptions, together with furuncle, prurigo, acne, and sycosis.

Farcinoma; farcy, from *farcio*, to stuff, and νομη, eating; the term farcy seeming to imply a disease proceeding from a full or gross habit, and noma, the consequent eating away or ulceration. The farcy or equinia; in French, *farcin*, and Italian *farcina*.

Favus; a honeycomb; as an adjective, favosus, implying honeycomb-like.

Ficus; a fig. A term applied to growths bearing some resemblance in shape to a fig, especially to pedunculate growths, such as those met with at the verge of the anus, condylomata, and tegumentary mollusca; also used to indicate a disease of the wall of the nails, ficus unguium; and the exuberant granulations of some forms of disease of the scalp.

Flos et **flores**; a flower, flowers; in the plural, the white spots sometimes seen in the nails, flores unguium; also, selene unguium, and mendacia unguium.

Frambœsia; apparently from the French *framboise*, a raspberry; the yaws, an African exanthema accompanied with the development of exuberant granulations resembling the raspberry.

Freckles; from the German *fleck*, a spot; spots upon the skin; in the Latin, lentigo and lentigines.

Furfur, furfures; furfures capitis, Pliny; bran; scurf of the head, dandriff.

Furunculosis; *furunculus*, a boil; a convenient term for expressing a disposition or tendency to the eruption of boils; equivalent to "furuncular diathesis."

Furunculus; Celsus; diminutive of fur, a thief, therefore a little thief, a felon; a boil, Wiseman terms a severe form of whitlow a felon; furunculus may possibly draw its origin from *furere*, to rage, expressive of the severity of the pain which steals away our rest. Mayne derives it from *ferveo*, to be hot, as if fervunculus.

Galactidrosis; γαλα, γαλακτος, lac, lactis, milky; ιδρωσις, perspiration; lactescent or milky perspiration.

Gale; the French popular term for the itch; scabies ab acaro.

Gelatio; a freezing; from *gelare*, to freeze, therefore frost-bite.

Glycerine; γλυκερος, et γλυκυς, sweet, from its sweetness of taste; glycyrion, a term suggested by Dr. Frederick Farre, is a convenient as well as an elegant title for the compounds of glycerine.

Goose-skin; a literal translation of cutis anserina; roughness and papulation of the skin produced by dermatospasmus and consequent erection of the cutaneous pores, giving the skin the appearance of a plucked fowl.

Grando; hail; a small hard encysted tumor of the eyelids, resembling a hailstone in transparency.

Grutum; in German, der gries; grits, a coarse kind of oatmeal; the term is not ill-chosen to express the grit-like appearance of the follicles of the face from distension with white sebaceous matter; sebaceous tubercles, pearly tubercles, miliary tubercles, milium.

Gutta rosacea; *gutta*, a spot, speck, or drop, therefore the rosy spot, or rosy drop. An eczema of the face, improperly designated by the term acne rosacea, but more correctly, varus gutta-rosea by Alibert. By Plenck it is defined, "Corymbus macularum rubrarum in facie et naso."

Hæmidrosis; αιμα, blood; ιδρωσις, perspiration; bloody sweat. The ephidrosis cruenta of Mason Good.

Hæmodyscrasia; αιμα, blood; δυσκρασια, bad temperament; κρασις, mixture or composition; unhealthy condition of blood.

Hæmorrhagiæ; αιμορραγια, Hippocrates; hemorrhage. Hebra's fifth class, devoted to purpura.

Hæmorrhœa; αιμορροια, Hippocrates; αιμα, blood; ρεειν, to flow; a discharge of blood; hemorrhage.

Helminthiasis; ελμινθιασιν, to suffer from worms; ελμινς, a worm.

Hepatizon; ηπατιζειν, Dioscorides; to be liver colored; from ηπαρ, the liver. A liver spot; one of the synonyms of chloasma.

Herpes; ερπης, Hippocrates; ερπειν, to creep; herpes, a creeping or spreading eruption. Galen defines it as an eruption of small vesicles; and this definition has been adopted by Willan, and is the one generally received in this country. Herpes esthiomenos is the Hippocratic designation of lupus exedens.

HETEROPLASIÆ; ετερος, different; πλασις, conformation; structures different from and opposite in nature to the normal structures; synonymous with pseudoplasmata, Hebra's ninth class, consisting of cancer and tubercle.

HIVES; a popular term for a vesicular eruption, shaped like a bee-hive, applied to a dispersed form of herpes, to modified variola, and to varicella.

HOMŒOPLASIÆ; ομοιος, *similis*, like; πλασις, conformation; similar structure; synonymous with neoplasmata, Hebra's eighth class; diseases depending upon a morbid distribution of normal tissues.

HORDEOLUM; Celsus; *hordeum*, a grain of barley. A small tumor or boil occurring upon the border of the eyelids.

HYDRARGYRIA; an erythema or eczema excited by the use of mercury.

HYDROA; ιδρωα, Hippocrates; sweat eruption; in Latin termed sudamina and æstates. Hydroa febrile is a synonym of herpes labialis, Franck.

HYDROADENITIS: υδωρ, water; αδην, a gland; a term given by Bazin and Verneuil to minute inflammatory tumors in the skin, sometimes ending in suppuration, and supposed to have their origin in inflammation of the sudatory glands.

HYPERÆMIÆ; υπερ, super; αιμα, blood; excess of blood contained in the bloodvessels, as in inflammation; the title of Hebra's first class, consisting of erythems, active and passive.

HYPERÆSTHESIA; υπερ, super; αισθησις, sensation; excessive sensibility.

HYPERIDROSIS; υπερ, super; ιδρωσις, perspiration; excessive perspiration.

HYPERPLASIS, HYPERPLASIA; υπερ, super; πλασις, conformation; excessive conformation; accumulation of similar structure.

HYPERTROPHIA; υπερ, super; τροφη, nourishment; excessive nutrition as shown in excessive growth or enlargement. Hypertrophiæ, is the title of the sixth group of Hebra's classification, its sub-divisions being, hypertrophy of epidermis, pigment, corium, follicles, and appendages of the skin, namely, hairs and nails.

ICHTHYOSIS; ιχθυα, Hippocrates; the dried rough skin of a fish, from ιχθυς, a fish; the fish-skin disease.

IDROSIS; ιδρωσις, a perspiring; ιδροω, to sweat or perspire. The sweating disease or sickness.

IGNIS; fire; ignis sacer, Celsus, Pliny. The ignis sacer of Celsus is a chronic tubercular affection, suppurating and forming ulcers, and spreading by the circumference; probably strumous or syphilitic. Ignis sancti Anthonii is a synonym of erysipelas; ignis Persicus, of anthrax; while herpes zoster has been termed zona ignea, from the burning pain which attends it.

IMPETIGO; Celsus, Pliny; *ab impetu agens;* breaking out with violence or impetuosity; a pustular eczema.

INTERTRIGO; *ab interterendo*, a rubbing together; a chafe-gall, or gall from chafing; a fret; a term applied to one of the varieties of erythema; when accompanied with a muco-purulent secretion, it is an eczema mucosum.

IONTHOS; ιονθος, the root of a hair. Hippocrates applies this term to an eruption on the face associated with the first growth of the beard; to the same eruption the term ακμαι, or acne, has also been given. Greenhill connects the word with ανθος, a flower, because the eruption occurs at about the flower of life; and Mason Good derives the term from ιον, violet, on account of the occasional purple hue of the eruption, and treats it as a genus containing two species, varus and corymbifer.

ITCH: an uneasiness or irritation of the skin, which demands the aid of rubbing or scratching for its relief. The psora of the Greeks; scabies of the Latins. Strictly, the itch or scabies is an eczema excited by the presence of the acarus humanus in the cuticle.

JUZAM, JUDAM; from an Arabic root, signifying erosion, truncation, excision; Mason Good. The Arabian term for elephantiasis Græcorum, and particularly the anæsthetic form of the disease. Of a similar origin are the terms, *judas*, *juzamlyk*, *judamlyk*, *alzuzam*, *djudam*, *dsjuddam*, *djouzam*, *madsjuddam*, *jeddem*, *muzjeddem*, *didyam*, *damadyand*, *dschiddam*, *sghiddam*, &c., the Mahommedan and Persian *jezam*, and the Moorish *ezdam*.

KELIS, KELOIDES, KELOIS, CHELOIS; κηλη, a tumor; ειδος, resemblance; tumor-like; probably from χηλη, a sea-bank or mole. A cutaneous tumor, commonly ridge-like in form, produced by hypertrophy of the white fibrous tissue of the corium. Another signification of kelis is, *mucula*, a mark, spot, stain or blemish.

Kerion; Celsus; κηριον, a honeycomb; from κηρος, wax. A suppurative inflammation of the follicles of the scalp; the follicles filled with yellow pus, and pouring out a viscous secretion resembling honey, suggest the idea of a honeycomb. The separate pustule of kerion corresponds with Willan's definition of achor.

Kibe; kerb, a cut; a broken chilblain.

Knesmos; κνησμος, Hippocrates; from κναειν, to scratch, to itch: hence also κνησις, a scratching, and κνησμα, a comb. An itching, particularly that produced by the nettle. Κνησμονη, is one of the synonyms of psora, and Turner treats of pruritus under the head of knesmos.

Krithe; κριθη, κριθαι, barley, hordeolum. "In the eyelids above the eyelashes there is apt to occur a small tubercle, which the Greeks name κριθη, from its resemblance to a grain of barley," Celsus.

Lanugo; from its resemblance to wool, *lana*. The downy hairs of the body, the first and temporary hairs of the infant, and the fine hairs of the face of puberty.

Lenticula; Celsus; diminutive of *lens*; a lentil, a freckle. Freckles frequently correspond both in color and size with the lentil; according to Plenck, "lentigines sunt maculæ fuscæ, quæ, colore, figurâ et magnitudine, lentes referunt."

Lentigo; Pliny; the same as *lenticula*. Dioscorides calls lentigo, φακος; hence phacia, a freckled skin.

Leonita, leontiasis; λεοντειος, lion-like; a term applied to elephantiasis tuberculosa, in consequence of a leonine expression of countenance being common in that disease; the da el ased, or lion disease of the Arabians.

Lepidosis; λεπις, or λεπος, a scale; νοσος, disease; the scaly or squamous disease. Lepidosis is the fourth genus of the order acrotica, class eccritica of Mason Good; the species being four in number, namely, pityriasis, lepriasis, psoriasis, and ichthyasis.

Lepra; λεπις, or λεπος, a scale; λεπειν, to scale; λεπρος, scaly; λεπρα; Herodotus, Hippocrates; the leprosy. The Greeks admitted three forms of lepra, namely, alphos, melas, and leuce, and adopted the term elephantiasis as embracing melas and leuce. Willan retained the term lepra in connection with alphos; but modern opinion is in favor of its association with the elephantiasis Græcorum solely.

Lepriasis; Mason Good; "λεπρος, scaber vel asper ex squammulis decedentibus; with a termination appropriated, by a sort of common consent, to the squammose tribe of diseases." Lepidosis lepriasis is the equivalent of alphos.

Leucæthiopes; λευκος, white; αιθιοψ, an Ethiopian. A white negro; or negro, spotted white.

Leucasmus; λευκασμος, λευκανσις; a whitening, or growing white.

Leuce; λευκη, Herodotus, Hippocrates, Celsus; λευκος, light, white. The white leprosy; the lepra leuce or elephantiasis of the Greeks; that variety in which the skin is bleached white, or contradistinguished from the lepra melas, or black leprosy. From leuce is derived the *leuta* of Montserrat.

Leucoderma; λευκοδερματος, with a white skin; white discoloration of the skin.

Leucopathia; λευκοσ, white; παθος, disease. The white disease, resulting from the loss or absence of pigment in the skin. The same as albinismus.

Lichen; λειχην, a tree moss, especially of the olive; Theophrastus. As a cutaneous eruption, the term was employed by the Greeks, in the plural; λειχηνες, και λεπραι, και λευκαι, Hippocrates; to the same author is attributed the definition, Λειχην est summæ cutis vitium ut ψωρα et λεπρα cum asperitate et lævi pruritu; and according to Galen, summæ cutis asperitas cum multa prurigine, squamis et furfuribus. At present we limit its use to an eruption of "dry" pimples.

Lues; λυειν, solvere, dissolvere. A synonym of syphilis.

Lupus, a wolf, from its eating or destroying quality. A scrofulous tubercular eruption, presenting three forms, erythematous, non exedens, and exedens; the latter is also termed lupus vorax, and announces a destructive form of ulcer.

Maculæ; *macula*, a spot or stain. The title of Willan's eighth order, which includes ephelis, nævus, spilus, &c. The use of the term is also shown in its application to maculæ hepaticæ, maculæ syphiliticæ, &c.

Madarosis; μαδαρωσις, calvities, baldness.

Malis, maliasmus; μαλις, μαλιασμος, cutaneous vermination, not confined to man, but common to animals in general. The seventh genus of the order acrotica of Mason Good, including the malis and phtheiriasis of Sauvages, and comprehending six species, namely, malis pediculi, pulicis, acari, filariæ, œstri, gordii. Fuchs gives the name maliasmus to equinia.

MEASLES; probably derived from an ancient English word "mesel," used in the time of Edward the Third synonymously with leper. Other cognate terms are, meselle, meselrie, meselry.

MECOUTASH; Hebrew. Leviticus, chapter xiii. ver. 23, 24. κατακαυμα πυρος, LXX. A burning boil, a hot burning, O.T. A burning as of fire; a carbuncle.

MELANODERMA; μελας, μελανος, black. δερμα, skin. Black discoloration of the skin.

MELANOPATHIA; μελας, black; παθος, pain or disease. The disease of blackness; an excess of pigment deposited in the skin.

MELANOSIS; μελανωσις, μελανσις, a becoming black; the opposite of leucasmus. Another derivation is μελας, black; νοσος, sickness or disease; the disease of blackness resulting from the deposit of black pigment in any of the tissues of the body.

MELAS; μελας, Celsus. The black leprosy, just as *leuce* expresses the white leprosy; the former being lepra or elephantiasis Græcorum, with the deposition of black pigment in the rete mucosum; the latter the same disease with the abstraction or absence of pigment.

MELASMA, MELASMUS; μελασμα, μελασμος, Hippocrates; blackness; a black spot; darkening of the skin by the deposit in the rete mucosum of an excess of pigment.

MELICERIS; μελικηρις, Hippocrates, Celsus; from μελι, honey; κηρος, wax, or honeycomb; μελικηρια, μελικηρον, have the same meaning. A virulent eruption on the head resembling a honeycomb; the disease kerion, a suppurative inflammation of the follicles of the scalp; the tinea favosa of the Romans. The term has been misapplied to an encysted tumor of the scalp containing a substance resembling wax, and of the consistence of honey.

MELITAGRA; μελι, honey; αγρα, seizure, attack. An exudative disease emitting a discharge like honey; one of the symptoms of eczema pustulosum vel impetiginodes of the face.

MENDACIA; lies, falsities, deceits; mendacia unguium; white opaque spots in the nails, resulting from faulty structure; by the Greeks they were termed λευκαι.

MENIDROSIS; μηνες, menses; μην, a month; ιδρωσις, perspiration. A sanguineous oozing from the skin vicarious of the menstrual discharge.

MENTAGRA; a hybrid word, composed of *mentum*, the chin, and αγρα seizure or attack. A disease of the chin synonymous with sycosis.

MENTAGROPHYTON; mentagra; φυτον, a plant. The parasitic plant of mentagra; a name invented by Gruby.

MICROSPORON; μικρος, small; σπορος, seed: a dermophytic fungus remarkable for its simple cell structure; met with in chloasma, and identical with the epidermophyton of Bazin; the microsporon furfur.

MILIA, MILIARIA; *milium*, the grain called millet seed. An eruption of vesicles developed under the influence of prolonged perspiration. The term is synonymous with sudamina.

MILIUM; *milium*, millet seed. An eruption of small sebaceous tubercles, or pearly tubercles; the exormia milium of Mason Good; grutum, of Plenck.

MOLE; Saxon; a natural mark or discoloration of the skin; a nævus. Moles are of four kinds, tegumentary, pigmentary, pilous, and vascular.

MOLLUSCUM; *mollis*, soft; antiq: mollus, unde molluscus. A term applied to soft, prominent, and sometimes pendulous tumors; it should be restricted to tegumentary tumors, and is applied improperly to a small tumor resulting from the enlargement of a sebiparous gland termed molluscum contagiosum.

MORBILLI; *morbillus*, diminutive of morbus, disease, disorder, distemper. A synonym of measles and scarlatina, of Saracenic origin, derived from the Cordova school, and originally spelt *morbillo*. At present we limit its signification to measles.

MORPHŒA; μορφη, form, appearance. A spot on the skin, sometimes black, morphœa nigra; and sometimes white, morphœa alba; corresponding with the melas and leuce of leprosy. Morphew.

MORPIO; the pediculus pubis, or crab-louse.

MORVE; French; the mucous secretion of the nose; a synonym of glanders; one of the forms of equinia.

Mycosis; μυκος, a fungus; a term applied by Alibert to frambœsia; molluscum contagiosum he terms mycosis fungoides; μυκης, Hippocrates, is a fleshy excrescence.

Myrmecia; μυρμηκια, Celsus. Warts on the palm and sole of the hands and feet; from μυρμηξ, an ant; sessile warts, as distinguished from acrochordones or pedunculate warts; probably compared with ants from their appearance when numerously clustered.

Myrmeciasmos; μυρμηκιασμος, a breaking out of warts or wart eruption; μυρμηκωδης, signifying full of warts.

Nævus; *a natu*, as in nativus; or, *a genere*, to beget, as in gnævus. A natural mark, freckle, spot, excrescence. Hence, nævi materni, vasculosi, pilosi, pigmentosi, &c.

Narcosis; ναρκωσις, Hippocrates; a benumbing; hence, narcosis folliculorum, arrest of function or torpor of follicles.

Nega; Hebrew; Leviticus, chapter xiii. ver. 29; αφη, LXX.: Old Testament.

Neoplasma; νεος, new; πλασμα, formation; neoplasmata, Hebra's eighth class, consisting of diseases resulting from the production of new formations, as of epidermis, areolar tissue, fibrous tissue, fatty tissue, vascular tissue, cholesteatomatous, osseous, and melanotic tissue.

Netek; Hebrew; Leviticus, chapter xiii. ver. 30; θραυσμα, LXX.; a dry scall, Old Testament; a breaking out.

Neurosis; νευρον, a nerve; a nervous affection.

Nigredo; blackness; hence, nigredo cutis, blackness or swarthiness of skin.

Nigrities; Celsus; the same as nigredo.

Nirles; herpes phlyctænodes; olophlyctis miliaris of Alibert.

Noli me tangere; touch me not; term of dread applied to lupus exedens.

Nomæ; corroding sores, which by creeping on corrode and consume the body; from νεμειν, to spread; hence, νομη, a pasture; and νομαι ελκων, Dioscorides, eating sores or ulcers.

Nosophyta; νοσος, disease; φυτα, plants. Diseases caused by the vegetation of plants; a term first used by Gruby of Vienna, as the designation of a group of parasitic cutaneous diseases.

Olophlyctis; ολοφλυκτις, Theocritus; an entire and complete phlyctis or vesicle. Alibert uses the term to represent the small bulla of herpes.

Onychia; ονυξ, a nail; disease of the matrix of the nail.

Ophiasis; οφιασις, Celsus; a bald place on the head; of serpentine form; from οφις, a serpent; a variety of alopecia areata.

Osmidrosis; οσμη, odor; ιδρωσις, perspiration; fetid perspiration; the ephidrosis olens of Mason Good; odor hircinus.

Pachydermia; παχυδερμια, Hippocrates; thickness of skin; from παχυς, thick; δερμα, the skin.

Pachylosis; the same in signification as pachydermia, but not founded on so good authority.

Panaris; **Panaritium**; probably derived from πανος, panus; an abscess close to the nail; a paronychia or whitlow.

Panus; πανος, Celsus; hence the Latin, panis; bread, cake, anything round like a ball or loaf of bread; a superficial subcutaneous abscess.

Papulæ; Celsus; pimples. Willan's first order, comprising: strophulus, lichen, and prurigo.

Paratrimma; παρατριμμα, Dioscorides; παρατριβω, to rub together; erythema caused by friction in riding or walking.

Paronychia; παρα, about; ονυξ, the nail. Panaritium or whitlow.

Peliosis; πελιωσις, πελιωμα, Hippocrates; πελιουν, πελιαινειν, to make livid; livor. A livid spot resulting from extravasation of blood.

Pellagra; Italian; *pelle*, skin; *agra*, rough; literally rough skin. An erythematous disease of Italy, Spain, and France, known by many synonyms; sometimes called "mal del sole;" and, by Mason Good, elephantiasis italica.

Pemphigus; **pemphix**; πεμφιξ, Hippocrates, a bubble, bladder, or blister; πεμφιγωδης, Hippocrates, full of blisters. The type of the bullæ of Willan; and bullous eruptions.

PERNIO; Celsus; a chilblain or kibe; probably from περκνος, livid; a term used by Hippocrates.

PETECHIA; *petechie*, Italian; "small stains that sometimes come out on those who have a malignant fever." A circular red spot resembling a flea-bite, met with in purpura.

PHACIA; φακος, a lentil; hence a lentil-shaped spot; a freckle, φακος προσωπου, lens faciei. Dioscorides, a physician of the first or second century, was called Phacas, from possessing a freckled face; Galen, Paulus Ægineta. In Latin, lenticula and lentigo.

PHÆNICISMUS; φοινιξ, purple, red, or crimson; a synonym of measles; φοινικεος, red; Hippocrates applies the term φοινικιη νουσος, to elephantiasis, the red leprosy.

PHÆNIGMUS; φοινιγμος, Hippocrates; a reddening; used with the adjective petechialis by Sauvages, and as a synonym of varus by Ploucquet.

PHALACHROSIS; φαλαχροσις, canities. Whiteness or hoariness of hair.

PHLEBECTASIA; φλεψ, φλεβος, a vein; εκτασις, extension; increment of the venules of the skin, the same as hypertrophia venarum.

PHLYCTÆNA; φλυκταινα, Hippocrates, Celsus. A rising of the skin, whether vesicle, pimple, or pustule; φλυκτις has the same signification, from φλυειν, to bubble or boil up; φλυκταινωσις is an eruption of phlyctænæ; and φλυκταινωδης, corresponds with the word phlyctenous.

PHLYCTÆNOSIS; φλυκταινωσις, Hippocrates; an eruption of phlyctæ or phlyctænæ; a term embracing all the vesicles intermediate in size between the small vesicle of eczema and the magnified vesicle or bulla of pemphigus.

PHLYCTÆNULA; diminutive of *phlyctæna;* therefore, a small vesicle.

PHLYCTIS; φλυκτις, Hippocrates: the same in signification as phlyctæna.

PHLYZACION; φλυζακιον, Hippocrates, Celsus: φλυζειν, to be hot. A hot pustule with a hard base; an inflammatory pustule, like ecthyma.

PHTHEIRIASIS; φθειριασις, Celsus; φθειρ, pediculus, a louse. The lousy disease; morbus pedicularis. Celsus would seem to limit the affection to the eyelids; hence, he says: "there is also a disorder which the Greeks term φθειριασις, and which results from the presence of pediculi between the eyelashes."

PHYGETHLON; φυγεθλον, Hippocrates, Celsus. A swelling and inflammation of the glands, especially of the groin, like βουβων; in the Latin, panus. "Phygethlon est tumor, non altus, sed latus. . . . Fit maxime aut in vertice, aut in alis, aut in inguinibus, panum, ad similitudinem, figuræ, nostri vocant." Celsus 5, 28.

PHYMA; φυμα, Hippocrates, Celsus; φυειν, to grow, to spring up, or spring forth. A tumor or boil; tuber; vomica.

PHYTOALOPECIA; φυτον, a plant; αλωπεκια; baldness. Baldness produced by a vegetable growth; a term introduced by Gruby.

PHYTODERMATA; diseases of the skin whose proximate cause is a vegetable fungus.

PIAN; the term given by the French in the West Indies and South America to the disease frambœsia or yaws; pian conveys the idea, though incorrectly, of the disease being of syphilitic origin.

PINTA; a partial melasma, endemic in Mexico; the term is derived from *pinta*, a spot: *pintar*, to paint; to begin to deepen in color, like ripening grapes; hence pintas roxas. the petechiæ of purpura.

PITYRIASIS; πιτυριασις, Hippocrates; πιτυρα, bran; furfura, furfures, porrigo. The bran-like or scurfy eruption; one of the three squamous diseases of Willan.

PLICA; *plicare*, to knit together. The disease of matting of the hair, termed plica polonica,

POLYSARCIA; πολυσαρκια, fleshiness; plumpness; excessive bulk of the body, as by the accumulation of fat.

POMPHOLYX; πομφολυξ, Hippocrates; a bubble; πομφος has the same signification: akin to πεμφιξ, an eruption of water bubbles or blisters: πομφοι, Galen, eminences of cuticle containing a fluid; πομφολυγες, bubbles of air appearing upon water.

PORPHYRA; πορφυρεος, purple; purpura, porphyriacus, purpureus. The Greek synonym of purpura; πορφυρα signifies a brighter tint of red than the mere crimson or purple, φοινιξ.

PORRIGO; Celsus; *a porro;* quia, ut porrum in tunicæ involucra, ita cutis, velut in squamas resolvitur. Scurfiness or scaliness, especially of the head; dandriff; the equivalent of pityriasis. Mason Good derives the word, incorrectly as we believe, from "porrigere" to spread about; and Willan tells us that "it has been supposed that the similarity of the odor of this discharge to that of garlic (porrum) gave rise to the appellation of porrigo."

Porrigophyton; *porrigo;* φυτον, a plant. The plant of porrigo; a term introduced by Gruby.

Pruna; Avicenna; *perurere* to burn all over. A burning or live coal: the designation of a kind of furunculus or anthrax; possibly its name may have been suggested by some resemblance to a ripe plum.

Prurigo; *prurire*, to itch; an itching disorder of the skin.

Pruritus; the state of itching.

Pseudoplasma; ψευδος, false, πλασμα, formation; faulty structure; pseudoplasmata is Hebra's ninth class, comprising cancer and tubercle.

Psora; ψωρα, Hippocrates; ψαιειν, ψαειν, to rub: ψωριαειν, to have the psora or itch. A synonym of eczema among the Greeks; restricted at present to scabies. Theophrastus terms the lichen of the fig-tree, psora; while others give the name to the lichen of the olive. Mason Good maintains the derivation of psora from the Hebrew term *tsora*, "to smite malignantly or with a disease," "from the Hebrew tsorat they obtained their psora, as our own language has since the word *sore*."

Psoriasis; ψωριασις, from ψωρα; itch or mange. Dry scall, or scaly tetter, Mason Good.

Psydracia; ψυδρακιον, Dioscorides; diminutive of ψυδραξ, a blister on the tip of the tongue: a lie blister, from ψυδειν, to lie. A blister; ψυχρα υδρακια, frigidæ guttulæ, cold or non-inflammatory blisters or pustules.

Pterygium; πτερυγιον, Celsus; πτερυξ, a wing. Pterygium unguis, a growth of cuticle over the nail.

Purpura; *purpureus*, purple; the same as porphyra and porphyreos. The purple eruption.

Pustulæ; Celsus; *pustula;* a push, pock. blister, little wheal or blain; in modern medicine limited to a small vesicle or pock containing pus. Willan's fifth order, comprising impetigo, porrigo, ecthyma, variola, and scabies. Willan describes four varieties of pustule, which he names; phlyzacium, psydracium, achor, and favus.

Pyrophlyctis; πυρ, fire; φλυκτις, a vesicle; a fiery or hot vesicle, the term applied by Alibert to the pustula maligna.

Radesyge; a Scandinavian term for tertiary syphiloderma; derived from *rada*, bad, and *syge*, sickness or disease.

Rhagades; ραγας, rent or chink, Hippocrates; ραγω, ραγοεις, ραγωδης, torn or rent. Cracks, chaps, and fissures of the skin.

Rhypia; ρυπος, sordes; the more correct latinity of rupia, according to Mason Good, who includes the disease in his genus ecphlysis, thus: ecphlysis rhypia.

Ringworm; a circular eruption or tetter; in the popular sense it is applied indiscriminately to every circular or annulate eruption; scientifically, it is limited to trichonosis or tinea tonsurans, a disease in which the hair breaks close to the skin, and suggests the idea of being eaten off as by the tinea or moth-worm.

Rosa; rosa anglicana; rosa Sennerti; a synonym of erysipelas. Mal de la rosa is a synonym of pellagra.

Rosalia; a synonym of scarlatina; and according to Mason Good a more correct expression for that exanthem than the term "scarlatina;" the latter he designates *enanthesis rosalia*. By some authors it is written rossalia and rossania.

Roseola; the rose rash.

Rougeole; the French synonym of rubeola; but originally applied both to rubeola and scarlatina, the two diseases being confounded by early writers.

Rubeola; **Rubiola**; *rubere*, to blush, to redden; rubia, the madder used for dyeing. The measles.

Rupia; ρυπος, dirt, filth; Hippocrates applies the term ρυπον, to whey, probably from its want of clearness. A syphilitic ulcer covered with a foul crust.

Saat; Hebrew; Leviticus, chapter xiii. v. 2; ουλη, LXX.; a rising, O. T.; a prominence of the skin; swelling or tubercle.

Saphat; Hebrew; Leviticus, chapter xiii. v. 2; σημασια, LXX.; a scab, O. T.; a disease of the skin accompanied with the formation of a scab or crust.

Sarcoptes; the name given by Latreille to the acarus scabiei; Mayne writes the word sarcocopta; from σαρξ, flesh, κοπτω, to pierce.

Satyria, **Satyriasis**, **Satyriasmos**; σατυριας, σατυριασις, σατυριασμος, Hippocrates; from σατυρος, the satyr; synonyms of elephantiasis Græcorum, from the resemblance of a leper to a satyr; the face red, the forehead surmounted by small tumors like young horns, the nostrils expanded and flattened, the lips large, the chin projected, the ears lengthened, and the legs crooked and deformed.

Sauroderma; σαυρα, a lizard; δερμα, the skin. Lizard skin.

Sauriosis; the lizard skin disease.

Scabies; Celsus; from *scabere*, to scratch; σκαπτω, fut. sec. of σκαφειν, fodere, to dig, as with the nails in scratching. The Latin representative of psora and eczema, at present limited to the eruption excited by the acarus scabiei, the itch.

Scabrities; *scabritia*, roughness, ruggedness; as in the case of scabrities unguium.

Scall; a term of doubtful meaning; one while used in the sense of a "scale," and applied to a squamous disease such as alphos and psoriasis; another while to incrusted eruptions of the scalp and face, such as eczema impetiginodes, favus, and kērion, and sometimes synonymously with "tetter." We think the second of these significations the more correct, which rests on its derivation from a Saxon word meaning "a separation or discontinuity of skin," and consequent exudation. From scall we obtain the terms "scalled" and "scaldhead." Mason Good prefers the derivation from the Saxon *sceala* or *scala*, a scale.

Scarlatina; *scarlattino;* Italian, scarlet cloth. "A barbarous and unclassical term," says Mason Good, a vernacular from the Levant "that has unaccountably crept into the nomenclature of medicine, upon the proscription of the original and more classical name of rosalia."

Schechin; Hebrew; Leviticus, chapter xiii. v. 18; ελκος, LXX.; a boil, O. T. The Greek word is the source of the Latin "ulcus," and our own term, ulcer.

Scleroderma; σκληρος, hard; δερμα, skin. Hardness of the skin.

Scleroma; σκληρος, hard. Hardness of texture.

Scorbutics; the scurvy, the porphyra or purpura; "as a term," says Mason Good, "it is neither Greek nor Latin, nor any language whatever, but an intolerable barbarism, derived, as is commonly supposed, from the German compound *scharpocke*, literally aggregate-pox, cluster-pox, but more likely from *scharf-pocke*, violent or vehement pox, or *schorf-pocke* scurf or scurvy pox, to which the inventor has endeavored to give a sort of Latin termination.

Scrofuloderma; a term compounded of scrofula and derma, signifying scrofula of the skin or cutaneous scrofula.

Scrofulosis; a morbid state appertaining to, and of the nature of scrofula.

Seborrhœa; a term composed of *sevum* or *sebum*, tallow, and ρεειν, to flow; a flow or flux of sebaceous substance.

Selene unguium; σεληνη, the moon; implying roundness and whiteness; hence σεληνη, the bald crown of the head. The small, round white spots sometimes seen in the nails, especially of children, and termed mendacia.

Semeion; Celsus; σημειον, a mark, a spot; having the same signification as stigma. "Vari and lenticulæ," says Celsus, "are very well known, but there is a rarer kind, which the Greeks call σημειον, and which is redder and more irregular in figure than the lenticulæ," this is probably a form of small vascular nævus.

Shingles; *cinqula*, a belt or girdle; from its habit of encircling half the circumference of the body. The zona, zoster, zona ignea, and herpes zoster.

Sirones or syrones, also **cirones**; synonyms of acari, and especially acari scabiei.

Spargosis; σπαργωσις, Dioscorides; a swelling; σπαργαω, Hippocrates, to swell with humors; a substantive term applicable to elephantiasis Arabum, and boucnemia. Mason Good terms the puerperal tumid-leg, boucnemia sparganosis, and sparganosis puerperarum; but we prefer spargosis to sparganosis, as the true meaning of σπαργανωσις is, swathing a child in swaddling clothes. Under the genus spargosis may be included, spargosis cruralis, brachialis, scrotalis, penis, clitoridis, nymphæ, &c., and spargosis mollusca, or molluscum simplex.

Spedalskhed; the Norwegian term for elephantiasis Græcorum, derived from the word *spetal*, hospital; the disease being one for which the hospital was the common and necessary resort. Professor Boeck remarks that the old popular term for elephantiasis was *spetalsyge*, hospital sickness, and that in Sweden it is still termed *spetalskan*.

Spiloplaxia; σπιλος, a spot or stain; πλαξ, a flat and broad surface, or according to Alibert, a crust. The malum mortuum, a name assigned to a crusted stage of elephantiasis Græcorum.

Spilus; σπιλος, a spot, stain, blemish, a synonym of κηλις; σπιλωμα, has the same signification. A pigmentary mole.

Squarra; εσχαρα, Hippocrates; the scab or eschar resulting from burning. Roughness, scabbiness or scurfiness of the skin, a crust or eschar; in the former sense it is applied to trichonosis tonsurans, for example, squarra tondens, and to a variety of favus, namely, favus squarrosus.

Stearrhœa; στεαρ, fat, tallow, suet, sebum, sevum; ρεειν, to flow. A flow or flux of sebaceous substance, a more correct term than seborrhœa.

Steatoma; στεατωμα, Celsus; Galen; from στεατοειν, to turn into στεαρ or fat. A fatty tumor.

Steatozoon; στεαρ, sebum or fat; ζωον, a living being or animal. The animal of the sebaceous substance, the name given by ourselves to the entozoon of the sebaceous follicles, entozoon folliculorum; the acarus folliculorum of the discoverer of the animalcule, Simon; subsequently termed by Owen, demodex folliculorum.

Stigma; στιγμα, a spot or mark. The smallest of the spots of purpura, which is a mere speck or dot.

Strophulus; possibly from στροφος, a twisting of the bowels; colic; in the Latin *tormina*, implying the association of the eruption named strophulus with a disordered state of the bowels. The term στροφος, is used by Hippocrates, also by Aretæus. A papular eruption or lichen occurring in infants.

Struma; Celsus; στρωμα, stratum, "quod gutturi substrata sit;" a swelling in the neck or armpits, limited at present to scrofula.

Sty; **Stigh**; stithe, stihan, stian; stihan, a Saxon word signifying arising, springing up, ascent. To sty, as used by Spenser, means to soar, to ascend—

> "To climb aloft and others to excel,
> That was ambition and desire to sty."

Sudamina; sudor, sweat; a vesicular eruption associated with excessive perspiration. The vesicles equalling in size the millet seed, are also termed miliaria, or miliary eruption.

Sudatoria; the same in derivation as the preceding. The sweating sickness.

Sycosis; συκωσις, Hippocrates, Celsus; συκον, a fig; a rough, fig-like excrescence on the flesh, especially of the eyelids. An inflammation of the hair follicles of the face, attended with papulation, pustulation, and sometimes with fungous granulation, sycosis fungosa vel ficosa. Occurring on the chin it is termed mentagra.

Syphilis; σιφλος, defect; from σιφλοειν, to maim or cripple; but, according to Mason Good, the term was probably "invented by Frascatorio, about the close of the 15th century, from the Greek συ and φιλεω, imparting mutual love." The venereal disease, or lues venerea.

Syphilo-derma; syphilis; δερμα, syphilis of the skin; in the plural, syphilodermata; syphilitic affections of the skin.

Syrones, sirones and **cirones**; synonyms of acari, and especially the acari scabiei.

Teleiangeiectasia; τελειος, complete; αγγειον, bloodvessel; εκτασις, a stretching out or extension; an extension of bloodvessels; a designation of vascular nævus.

Terminthus; τερμινθος, τερεβινθος; Hippocrates; the terebinth or turpentine tree; a swelling resembling the fruit of the pistacia terebinthus. A kind of large boil or carbuncle, of which the cone or slough has been likened in shape and color to the ripe cone of the pinus abies.

Tetter; a Saxon word, signifying a tickling or itching scab; synonymous with the French word *datre*. Popularly the term is applied to every common eruption of the skin, attended with desquamation and itching. Compared with *scall*, which relates to incrustation resulting from the desiccation of an exudative secretion, tetter would signify a desquamation of cuticle, such as occurs in psoriasis and alphos.

Therioma; θηριωμα, Dioscorides, Celsus; θηριον, a wild and savage beast, a malignant sore. Hippocrates uses the term in its simple form, θηριον; τεθηριωμενον ελκος, malignant ulcer.

Thrausma; θραυσμα, a breaking, or breaking out; a Greek word used in the translation of the 13th chapter of Leviticus, chap. xiii. v. 30. A dry scall; O.T.

Thymion; θυμιον, Hippocrates, Celsus; θυμος, thyme. A warty excrescence, so called from its resemblance to a bunch of thyme-blossom, Galen; it is also used synonymously with συκον, ficus. A large wart.

TINEA; the moth-worm; "quod teneat et eous-que insideat, quoad erodat." Tinea capitis, the old term for trichonosis. The ringworm. Erosion of the nails is termed tinea unguium.

TRICHIASIS; τριχιασις, Hippocrates; θριξ, a hair. A disease of the eyelids produced by inversion of the eyelashes; the same term was given by the Greeks to eczema fissum of the nipples of nursing mothers.

TRICHOGENOUS; θριξ, a hair; γεινομαι, to beget; a term applied to remedies intended to aid the reproduction of hair.

TRICHOMYCES; θριξ, a hair; μυκης, a fungus; the fungus of the hair. Trichonosis tonsurans is termed by Malmsten, trichomyces tonsurans.

TRICHONOSIS; θριξ, a hair; νοσος, disease; disease of the hair. Mason Good employs the term trichosis in the same sense, pilare malum, on the authority of Actuarius; but τριχωσις, like τριχωμα, means hairiness, or growth of hair. Trichosis is the ninth genus of the order Acrotica of Mason Good, and contains eight species, namely, setosa, plica, hirsuties, distrix, poliosis, athrix, area, decolor. The chief varieties of trichonosis are, tonsurans, pityriasica, and annulata.

TRICHOPHYTON; θριξ, a hair; φυτον, a plant; the plant or vegetable fungus of the hair.

TRICHORRHŒA; τριχοῤῥυης; τριχοῤῥυειν, to shed or lose the hair. Defluvium or defluum capillorum; the fall of the hair.

TSORAT; a Hebrew word, signifying "venom or malignity," and used to intensify the two forms of leprosy comprehended by the Hebrew terms berat lebena and berat cecha; the former of these being the lepra leuce, the latter the lepra melas of the Greeks; the vitiligo candida and vitiligo nigricans of Celsus.

TYLOMA; τυλωμα, a callosity.

TYLOSIS; τυλωσις; τυλοειν, to make hard or callous; τυλος, a knot or callus, especially on the hands.

TYRIA; one of the synonyms of elephantiasis Græcorum, derived from the serpent Tyrus.

URCEOLARIS; *urceus*, a pitcher or pot; diminutive *urceolus*. Cup-shaped; as in favus urceolaris, a synonym of favus dispersus.

UREDO; *urĕre*, to burn; an itch or burning in the skin.

URIDROSIS; ουρον, urine; ιδρωσις, a perspiring; urinous perspiration.

URITIS; *urĕre;* the blisters occasioned by a burn or scald.

URTICARIA; *urtica*, a nettle. The nettle rash.

VACCINELLA; diminutive of vaccinia.

VACCINIA; *vacca*, a cow; the vaccine exanthem or smallpox of the cow; cow-pox.

VARICELLA; diminutive of *varus*, a pock or pimple; the chicken-pox.

VARIOLA; *varius*, spotted, speckled; "pustulæ, quibus cutis fit varia." The smallpox.

VARUS; Celsus; *varus*, uneven; "quia varum corpus facit et inæquale. A spot, pock, or pimple. The prototype of acne.

VERRUCA; Celsus; *verruncare*, to change a thing for the better; "quod averruncari debeat," which ought to be changed for the better. A wart.

VIBICES; plural of *vibex*, a mark or print of a stripe or blow, black and blue. One of the forms of discoloration seen in purpura. Plenck's definition of the term is: "striæ longæ, lividæ vel coccineæ."

VITILIGO; Celsus; *vitulus*, a calf, probably from being spotted like a calf. Vitiligo has three varieties, albida seu alphos, candida seu leuce, and nigricans seu melas.

VITILIGOIDEA; *vitiligo*; ειδος, likeness. A term applied by Dr. Gull to a yellow discoloration of the skin, for the most part affecting the eyelids; the disease which we have named xanthelasma.

WART; *warze*, German; verruca; a cuticular excrescence of the skin.

WEN; an excrescence or tumor, sometimes encysted and sometimes fleshy.

WHEALWORM; *wheal*, a pustule; one of the synonyms of the acarus scabiei.

WHITLOW; *white; low*, a flame; from its whiteness when pus is effused beneath the cuticle, and the hot burning pain by which it is accompanied. By Wiseman and Turner it is termed whitflaw.

XANTHELASMA; ξανθος, yellow, ελασμα, lamina; a yellow lamina commonly met with in the skin of the eyelids, xanthelasma palpebrarum, and presenting two varieties, xanthelasma papulosum and planum: the affection named by Addison and Gull, vitiligoidea.

XANTHOCHROIA; ξανθοχροια; ξανθος, yellow; χροια, the human skin. Yellowness of skin.

XANTHODERMA; the same as xanthochroia.

XANTHOPATHIA; morbid yellowness of the skin.

XERASIA; ξηρασια; ξηρος, dry, parched. A disease of the scalp distinguished by dryness.

XERODERMA; ξηρος, dry; δερμα, skin. A dry and parched skin.

YAW, an African word signifying a raspberry; the framboesia; pian of the French.

ZONA; ζωνη, a belt or girdle; ζωννυμι, to gird for battle; cingulum; and from the latter shingles. The herpes zoster, so named from partially embracing the body, also zona ignea from its burning heat, and zona herpetica, the latter being synonymous with herpes circinatus.

ZOSTER; ζωστηρ, a belt or girdle used by men, the zona being the appurtenance of women; the shingles are termed herpes zoster.

ZYMOTIC; ζυμη, leaven; ζυμουν, to ferment; ζυμωσις, fermentation. Hippocrates applies the term, hepatis zymosis, to a swelling of the liver.

INDEX.

PAGE
Abinzoar, on the acarus scabiei 740
Absorbent property of the skin 55
Acarus 713
    autumnalis 716
    folliculorum 679, 755
    scabiei 195, 202, 715, 739
    Stockholmii 716
Achor 615
Achorion Schoenleinii 615, 659
Achroma 610
Acne 94, 698
    coniformis 699
    indurata 699
    punctata 698
    rosacea 192
    simplex 699
    vulgaris 699
Acret, case of melanoderma 596
Acrodynia 226
Adams, on the acarus scabiei 745
    on scabies in Madeira 198
Addison, on melanopathia 597
Æstus volaticus, *vide* strophulus 174
Agnails 616
Agria, *vide* lichen agrius 142
Albinismus 610
Albinoes 610
Aldrovandus, on the acarus scabiei 740
Aleppo pustule 294
Alibert, classification 105
Alley, on hydrargyria 150
Allosteatodes 674
Alopecia 90, 627
    accidentalis 627
    areata 628
    calva 630
    circumscripta 628
    congenita 630
    leprosa 519, 592
    porriginosa 642
    senilis 631
    syphilitica 488
    ungualis 617
    vulgaris 627
Alphos 77, 353, 514
    annulatus 356
    circinatus 356
    diffusus 357
    guttatus 356
    gyratus 357

PAGE
Alphos papulosus 357
    pityriasicus 357
    punctatus 357
    syphiliticus 497
    vulgaris 356
Alphosis 610
    æthiopica 611
Alphous affections 352
Ambusta 728
Ambustio 726
    erythematosa 727
    gangrenosa 728
    vesicularis 728
Anæsthesia 296
Angeiectasia 303
Angina scarlatinosa 395
Anidrosis 708
Anthracion 293
Anthrax 285
Arctura unguis 617
Area 628
    Celsi 629
    diffluens 628
    serpens 628
Argyria 605
Arrectores pilorum 19
Arsenic, its therapeutic effects 120
Arsenical preparations 121, 764
Arteries of the skin 21
Asclepias gigantea 578
Asiatic pills 582, 766
Asteatodes 674
Ateleangeiectasia 303
Atheroma 689
Atheromatous matter 686, 690
Athrix calvities 630
    simplex 627
Atonic ulcers 488
Atrophia cutis 349
Atrophic affections 349
Axile corpuscles 20

Bacchia 192
Baker, on the acarus scabiei 743
Baker's itch 141
Baldness 627
Barbadoes leg 346
Basement membrane 30
Baths 116, 777
Beau, growth of nails 52

PAGE

- Becquerel and Breschet, animal heat . 62
- Benzoated ointments . 777
- Berat cecha . 591
  - lebena . 586
- Bichât, abnormal situation of hair . 624
- Biett, classification . 103
- Black measles . 389
- Blactiæ, *vide* rubeola . 386
- Blanching of the hair . 637
- Bloodvessels, pathology of . 86
- Bloody sweat . 711
- Boak . 353
- Boeck's researches . 199, 525
- Boil . 282
- Bonanni, on the acarus scabiei . 743
- Bonomo, on the acarus scabiei . 742
- Borellus, on the acarus scabiei . 743
- Boucnemia tropica . 346
- Bourguignon, on acarus scabiei . 754
- Bricklayer's itch . 141
- Briquet, treatment of variola . 425
- Bromidrosis . 708
- Bryce, vaccination test . 453
- Bulla, definition . 68
- Bullæ . 75, 258
- Bullous affections . 258
- Bunion . 333
- Burns . 726
- Burnt holes . 275

- Cacotrophia cutis . 97, 324
- Calcareous miliary tubercles . 697
- Callosities . 331
- Callus . 331
- Calvities . 630
- Cancrois . 337
- Canities . 90, 637
- Capillaries of the derma . 21
- Carate . 612
- Carbuncle . 285
- Carcinoma cutis . 379
  - glandulæ sebiparæ . 673
- Carcinomatous affections . 379
- Casal, on the acarus scabiei . 744
- Caustics . 378, 776
- Ceeley, on vaccination . 57
- Cells of epidermis . 22
- Celsus, classification . 100
- Cerumen . 34, 58
- Chalazion . 93, 698
- Chalazoderma . 335
- Chaoulmoogra . 583
- Chapped hands . 141
  - nipples . 140, 221
- Chaps, treatment of . 221
- Chelois . 337
- Chicken-pox . 428
- Chiggre . 721
- Chilblain . 736
- Chloasma . 607, 615
- Chromatogenous disorders . 594
- Chromidrosis . 710
- Chrystalli . 428
- Cicatrix . 83
- Cimex lectuarius . 721
- Cingula . 261
- Classification of skin diseases . 97
  - Alibert's . 105
  - Biett's . 103
  - Celsus's . 100
  - clinical . 110

PAGE

- Classification of skin diseases—
  - Devergie's . 107
  - etiological . 104
  - Greeks . 98
  - Hebra's . 107
  - Plenck's . 101
  - Rayer's . 104
  - Turner's . 99
  - Willan's . 101, 114
- Clavus . 331
- Cnidosis . 239
- Cochin leg . 346
- Comedones . 93, 677
- Commission of vaccine, report . 432
- Contagion, nature of . 384
- Contractility of the skin . 18
- Copper-color, definition of . 476
- Corium . 17
- Corns . 331
  - fibrous . 331
  - laminated . 332
  - soft . 333
- Cornua humana . 691
- Corpus papillare, *vide* papillary layer . 19
- Corpusculum tactus . 20
- Couperose . 192, 698
- Cow-pox . 433
- Crab-louse . 719
- Crinones . 714
- Crusta lactea . 138, 146
- Crustæ . 82
- Cryptogamia, in favus . 656
  - in sycosis . 668
- Cuticle, anatomy of . 17, 23
- Cutis, anatomy . 17
  - anserina . 19
  - pendula . 335
  - variegata . 701
- Cyanoderma . 610
- Cyanopathia . 610
- Cysts, serous . 698

- Dal fil . 513
- Dandriff . 164
- Danielssen's researches . 525
- Dartre . 125
  - crustacée flavescente . 189
  - crustacée stalactiforme . 138
  - de la graisse . 337
  - erysipelateuse . 125
  - erythemoide . 212
  - furfuracée . 164, 353
  - rongeante . 369
  - squammeuse . 353
  - squammeuse humide . 125, 138
  - vive . 125
- Decoloratio argentea . 605
- Defluvium capillorum . 627
- Defœdatio unguium . 618
- Deformitas unguium . 617
- De Geer, on the acarus scabiei . 750
- Degeneratio unguium . 618
- Demodex folliculorum . 755
- Depilatories . 626
- Derma, anatomy of . 17, 18
- Dermatitis phlegmonosa . 230
  - squamosa rubra . 168
  - symptomatica . 227
- Dermatolysis . 335
- Dermatophytic affections . 614
- Desquamation . 61

PAGE
evergie, classification 107
iapompholygos 735
iet, in diseases of the skin . . . 116
iscoloration 81, 593
obson on erysipelas 236
onovan solution 121, 765
upuytren's pomade for the hair . . 773
yschroma 594

ar-wax 34, 58
ating hive 275
cchymomata 311
  unguis 618
cchymoses 311
  spontaneæ 309
cphlysis eczema 125
  herpes 259
  pompholyx 272
  rhypia 486
cphyma 328
  acrochordon 328
  clavus 331
  mollusciforme 328
  papillosum 334
  verruca 329
cpyesis ecthyma 278
  impetigo 189
  scabies 195
cthyma 77, 278
  acutum 279
  cachecticum 280
  chronicum 279
  gangrenosum 280
  infantile 280
  luridum 280
  syphiliticum 485
  vulgare 280
ctrotic treatment of variola . . 424
czema 73, 125
  ani 141
  articulorum 141, 163
  aurium 140
  axillarum 140
  capitis 138
  chronicum 162
  diffusum 137
  digitorum 142
  dorsi manus 142
  erythematosum 133
  faciei 139
  figuratum 137
  fissum 136, 163
  foliaceum 168
  furfuraceum, *vide* pityriasis . . 164
  ichorosum 134
  impetiginodes 135
  infantile 143
  labiale 140
  larvale 146
  madidans 134
  mamillarum 140
  manuum 141
  marginatum 137
  mercuriale 150
  mucosum 136
  neurosum 137
  nummulare 137
  œdematosum 136
  oris 140
  palmare 142
  palpebrarum 140

PAGE
Eczema papulosum 134
  pedum 141
  perinei 141
  pityriasicum 164
  plantare 142
  pudendi 141
  pustulosum 135
  rubrum 134
  sclerosum 136, 162
  simplex 129
  solare 134
  squamosum 135, 162
  umbilicale 140
  unguium 142
  verrucosum 136, 162
  vesiculosum 134
Eczematous affections 123
Elephanta 517
Elephantiasis 519
  alopeciata 519
  anæsthetica 519
  Arabum 346
  asturiensis 222
  cases of 531
  existing forms of 584
  Græcorum 519
  italica 222
  legitima 519
  leontina 519
  nodosa 519
  orientalis 519
  treatment of 570
  tuberculosa 519
Emphlysis erysipelas 227
  miliaria 269
  pemphigus 272
  vaccinia 432
  varicella 428
Emphyma encystis 689
Enanthesis 239
  rosalia 392
  urticaria 239
Encysted sebaceous tumors . . 93, 689
Endermic medicine 56
Entozoon folliculorum 755
Ephelis 602
  alba 611
  dysmenorrhœalis 602
  gravidarum 602
  hepatica 602, 607
  hæmorrhoidalis 602
  ignealis 602, 727
Ephelis, lentigo 606
  solaris 602, 727
  umbrosa 602
Ephidrosis 702
  chronica 702
  cruenta 711
  discolor 710
  olens 708
  partialis 703
  profusa 702
Epichrosis 593
  alphosis 610
  ephelis 602
  lenticula 606
  pœcilia 611
  spilus 326
Epiderminosis 615
Epidermis, anatomy of 17, 23
  pathology of 87

PAGE
Epinyctis . 283
Epithelial cancer . 380, 672
Epithelioma . 380, 672
Equinia . 462
Erectile tumors . 303
Eruptive fevers . 382
Erysipelas . 227
  bullosum . 230
  capitis . 231
  erraticum . 229
  faciei . 231
  gangrenosum . 230
  genitalium . 231
  mammæ . 231
  metastaticum . 229
  miliare . 230
  neonatorum . 231
  œdematodes . 230
  phlegmonodes
  phlyctenodes
  simplex . 227
  traumaticum . 227
  umbilicale . 231
  vesiculare . 230
Erythema . 69, 212
  a gelu . 737
  centrifugum . 374
  chronicum . 164
  circinatum . 217
  endemicum . 222
  epidemicum . 226
  erysipelatosum
  exsudativum
  folliculorum
  fugax
  gangrenosum
  gyratum
  hyperæmicum . 213
  ichorosum . 138
  intertrigo . 214
  iris . 217, 266
  læve . 215
  marginatum . 185, 217
  menstruale . 215
  mercuriale . 150
  nodosum . 216
  œdematosum . 215
  palmare syphiliticum . 490
  papulatum . 216
  paratrimma . 214
  pityriasicum . 164
  plantare syphiliticum . 490
  simplex . 214
  syphiliticum . 490, 497
  tuberculatum . 216
  tumescens . 215
  vesiculare . 230
  volaticum . 174
Erythematous affections . 212
Essera . 175, 239
Esthiomena . 369
Esthiomene serpigineuse . 369
Esthiomenos . 373
  obambulans . 373
Etmuller, on the acarus scabiei . 742
Exanthema, definition . 68
  labiale . 263
Exanthemata . 382
Exanthesis roseola . 246
Exormia lichen . 171
  milium . 697

PAGE
Exormia prurigo . 299
  strophulus . 174

Fabricius, on the acarus scabiei . 750
False measles . 246, 248
Farcin . 462
Farcinoma . 462
Farcy . 462
Favus . 615, 654
  confertus . 654
  dispersus . 654
Febris anginosa . 292
  erysipelatosa . 227
  miliaris . 269
  morbillosa . 386, 389
  rubra . 392
  scarlatina . 392
  urticata . 239
  variolosa . 402
ing of the hair . 641
volage, *vide* strophulus . 174
us phyma . 667
s unguium . 617
ria medinensis . 722
-skin disease . 320
edo cutis . 606
es unguium . 618
icular elevations . 697
tumors . 689
rcault, his experiments . 61
gilitas crinium . 91, 641
unguium . 619
mbœsia . 465
kles . 606
tbite . 736
uncular affections . 278
unculus . 282
  anthracoides . 287
Fuscedo cutis . 594

Gabucinus, on the acarus scabiei . 740
Gale . 195
Gales, on the acaris scabiei . 746
Gelatio . 736
Glanders . 462
Glands of the skin, pathology . 92
Glasspox . 428
Glycerine . 773
Glycyria . 773
Goose-skin . 19, 625
Gown, red . 174
Grando . 93, 698
Grantham, on erysipelas . 235
Granular degeneration of epidermis . 92
  of hair . 646
Grayness of the hair . 637
Gras, Albin, experiments . 210, 747
Gregory, on petechial cow-pox . 449
Grocer's itch . 141
Grubs . 677
Gruby, on mycodermis . 661
  researches on sycosis . 668
Grutum . 697
Gryllus verruciverus . 331
Gum-rash . 174
Gutta rosacea . 192

Hæmic affections . 308
Hæmidrosis . 711
Hæmorrhagic measles . 389
Hæmorrhœa petechialis . 308
Haffenreffer, on the acarus scabiei . 742

PAGE
Hair, abnormal direction 641
  affections 622
  alteration of color 635
  anatomy 35
  augmented formation 623
  chemical composition 49
  color 41, 50
  development 48
  diminished formation 626
  diseases 622
  downy 39
  felting of the 641
  growth of the 43
  number 47
  pathology of 90
Hair-follicles, anatomy 42
  diseases 650
Hall Marshall, on nævi 307
Harvest bug 716
Hauptmann, on the acarus scabiei . 741
Hebra, burns, treatment of . . . 735
  classification 107
  perpetual warm bath . . . 735
  smallpox, treatment of . . . 424
Helminthiasis 722
Henderson, on molluscum 687
Hepatizon 607
Hereditary syphilis 496
Herpes 74, 259
  auricularis 263
  circinatus 264
  esthiomenos 369
  exedens 369
  iris 266
  labialis 263
  miliaris 262, 269
  nasalis 263
  palpebralis 263
  phagedænicus 372
  phlyctænodes 262
  præputialis 263
  proserpens 261
  pudendalis 264
  squamosus madicans 125
  tonsurans 642
  zoster 261
Herpetic eruptions 258
Higginbottom, on erysipelas . . . 237
Hirsuties 90, 623
Hives 275, 413
  eating 275
Hordeolum 285
Horn-pock 409
Horns, human 691
Huile de Cade 770
Humid tetter 125
Hunter, John, on the acarus . . . 744
Hydrargyria 150
  febrilis 150
  maligna 150
  mitis 150
Hydroa 269
  febrile 263
Hydroadenitis 701
Hydroctyle asiatica 582
Hyperæsthesia 296
Hyperidrosis 702
Hypertrophia venarum 305

Iatraleptic medicine 58
Ichthyosis 78, 316
PAGE
Ichthyosis congenita 320
  cornea 319
  epidermidis 320
  farinacea 318
  furfuracea 518, 320
  mollis 320
  nacre 318
  nitida 318, 320
  reticulata 318, 320
  sebacea 318, 322
  serpentina 318, 320
  simplex 320
  spinosa 319
  spuria 322
  squamosa 319
  vera 320
  vulgaris 320
Idrosis 702
  maligna 704
  partialis 703
  simplex 702
Ignis, persicus 293
  sacer 260
  Sancti Anthonii. 227, 260
Impetiginous eruptions 189
Impetigo 74, 76, 189
  erysipelatodes 191
  figurata 191
  phlyctænodes 191
  scabida 141
  scabiosa 199
  sparsa 191
Infection, nature of 384
Ingrassias, on the acarus scabiei . . 740
Inoculation 413
Insensible perspiration 58
Intertrigo 136
Inunction in erysipelas 236
Ionthus 192, 698
Iron in erysipelas 233
Itch 195
  baker's 141
  bricklayer's 141
  grocer's 141
  washerwoman's 141
Itch-animalcule 195

Jackson, case of melanoderma . . 595
Jacobovics, on molluscum . . . 686
Jobertus, on the acarus scabiei . . 740
Johnson, on lichen tropicus . . . 177
Joint evil 519
Jugaru 581
Juzam 514

Kelis 337
  clavata 337
  cylindracea 337
  genuina 337
  idiopathica 339
  ovalis 337
  radiciformis 337
  serpens 339
  spuria 339
  traumatica 339
  tuberculosa 339
  vera 337
Keloides, *vide* Kelis 337
Kelois, *vide* Kelis 337
Kerion 94, 664
Kibe 736
Kircherius, on the acarus scabiei . . 743

PAGE

- Laminæ flavæ epithelii . . . 94
- Land-scurvy . . . 308
- Lanugo . . . 39, 49
- Lapsus unguis . . . 617
- Latreille, on the acarus scabiei, . . 751
- Lentigines . . . 607
- Lentigo . . . 606
- Leontia . . . 519
- Leontiasis . . . 519
- Lepidosis ichthyosis . . . 320
  - lepriasis . . . 353
  - pityriasis . . . 164
- Lepra . . . 519
  - alopeciata . . . 519
  - alphoides . . . 356
  - alphos . . . 353
  - Arabum . . . 519
  - anaisthetos . . . 519
  - articulationum . . . 519
  - asturiensis . . . 222
  - circinata . . . 356
  - diffusa . . . 357
  - elephantia . . . 519
  - gangrænosa . . . 519
  - Græcorum . . . 519
  - guttata . . . 356
  - Hebræorum . . . 519
  - inveterata . . . 357
  - Judæorum . . . 519
  - leontina . . . 519
  - leuce . . . 519, 586
  - medii ævi . . . 519
  - melas . . . 519, 591
  - mercurialis . . . 159
  - mortificans . . . 519
  - nigricans . . . 358
  - nodosa . . . 519
  - phlegmatica . . . 519
  - rheumatica . . . 519
  - rubra . . . 519
  - satyria . . . 519
  - scabiosa . . . 199
  - syphilitica . . . 308
  - taurica . . . 518
  - tuberculosa . . . 519
  - vulgaris . . . 356
  - Willani . . . 77
- Leprosy . . . 513, 519
  - of the Arabians . . . 515
    - Crusades . . . 516
    - Jews . . . 516
    - Middle Ages . . . 515
- Leprous affections . . . 513
- Leucæthiopes . . . 611
- Leucasmus . . . 610
- Leuce . . . 514, 519
- Leucoderma . . . 610
- Leucopathia . . . 610
- Levitican code . . . 560
- Lichen . . . 71, 171
  - agrius . . . 142
  - annulatus . . . 185
  - circinatus . . . 185
  - circumscriptus . . . 174
  - corymbosus . . . 174
  - dispersus . . . 173
  - eczematosus . . . 171
  - ferus . . . 142
  - gyratus . . . 186
  - lividus . . . 184
- Lichen marginatus . . . 186
  - pilaris . . . 184
  - planus . . . 178
  - pruriginosus . . . 173
  - ruber . . . 179
  - scrofulosorum . . . 184
  - serpiginosus . . . 185
  - simplex . . . 173
  - strophulosus . . . 174
  - syphiliticus . . . 474
  - tropicus . . . 176
  - urticatus . . . 175
  - urticosus . . . 175
- Lichenous eruption . . . 171
- Lines of motion . . . 28
- Linnæus, on the acarus scabiei . . . 748
- Liquor hydriodatis arsenici et hydrargyri . . . 121, 765
- Liston, treatment of erysipelas . . . 236
- Liver spot . . . 607
- Lotions . . . 773
- Lunula . . . 51
- Lupiform syphilis . . . 494
- Lupus . . . 369
  - erythematosus . . . 374
  - exedens . . . 369
  - exulcerans . . . 371
  - hypertrophicus . . . 371
  - non exedens . . . 373
  - serpiginosus . . . 371
  - treatment of . . . 376
  - tuberculosus . . . 371
  - tumidus . . . 371
  - vorax . . . 370
  - vulgaris . . . 369
- Lymphatic plexus of the derma . . . 21

- Macula, definition . . . 69
- Maculæ . . . 89
  - fuscæ . . . 603
  - hepaticæ . . . 607
  - nigræ . . . 308
  - syphiliticæ . . . 473
- Mal de la Chersonese . . . 518
  - de la Crimée . . . 517
  - de la rosa . . . 222
  - de misere . . . 222
  - del sole . . . 222
- Maliasmus . . . 462, 714
- Malignant tubercle . . . 380, 672
- Malis acari . . . 714
  - cimicis . . . 721
  - filariæ . . . 722
  - œstri . . . 725
  - pediculi . . . 717
  - pulicis . . . 720
- Mandl, researches on the hair . . . 44
- Matrix of nail . . . 50
- Measles . . . 386
- Meibomian glands . . . 34
- Melanoderma . . . 594
- Melanopathia . . . 594
  - syphilitica . . . 473
- Melanosis, cells of . . . 27
- Melas . . . 513 519
- Melasma . . . 594
  - figuratum . . . 602
  - oculi . . . 629
  - syphiliticum . . . 473
  - tinctum . . . 605

PAGE
Melasma universum 596
Meliceris 689
Melikerion 664
Melitagra. 139, 145, 189
Mendacia unguium 618
Menidrosis 711
Mentagra 667
Mentagrophyton 669
Mercurial eczema 150
Microsporon furfur 614
Midivaine, Dr., treatment of variola 425
Miliaria 74, 269
  alba 270
  clinica 269
  rubra 269
Miliary eruption 269
  vesicles 269
Milium 697
Moles 326, 624
Mollities unguium 618
Molluscum areolare 328
  contagiosum 93, 679
  parvum 679
  pisiforme 679
  sebaceum 679
  sessile 679
  simplex 328
  subglobulosum 679
Morbilli 386
  benigni 388
  confluentes 392
  erethrici 388
Morbus heracleus 517
  herculeus 517
  Maculosus 308
  pedicularis 717
  pilaris 653
  pulicaris 308
Morgagni, on acaru scabiei 743
Morphew 585
Morphœa 585
  alba anæsthetica 592
  alopeciata 585
  atrophica 588
  lardacea 586
  maculosa 585
  nigra 591
  tuberosa 585
Morpiones 719
Morve 462
Mother's marks 303, 326
Moufet, on the acarus scabiei 741
Mower's mite 716
Mucous membrane 30
Mud or Muddar 581
Müller on the acarus scabiei 750
Muscles of the hair 19
Muscular fibre of skin 18
Mycosis 465

Nævi materni 326
  pigmentosi 326, 603
  pilosi 326, 603, 624
  vasculosi 303
Nævus 302
  araneus 304
  arteriosus 303
  flammeus 304
  hypertrophicus 326
  maternus 303, 326
  pigmentosus 326

PAGE
Nævus sanguineus 304
  vasculosus 86
  venosus 303
Nail-follicle 50
Nails, anatomy 50
  chemical composition 53
  diseases 616
Narcosis folliculorum 653
Nerves of the derma 21
  pathology of, 85
Nervous affections 296
Nettlerash 239
Neuroses 86
Ngerengere 530
Nigredo cutis 594
Nigrities 594
Nirles 262
Nitrate of silver in erysipelas 237
Noli me tangere 369
Nosophyta 614

Odor hircinus 709
Ointments 771
Olliffe, treatment of variola 426
Olophlyctis 259
  labialis 263
  miliaris 262
Onychia 619
  maligna 620
  scrofulosa 620
  syphilitica 489, 620
Ophiasis 592, 628
Oribata geniculata 757
Osmidrosis 708
Oxide of silver stain 605

Pachylosis 336
Pacinian corpuscles 22
Panaris 621
Papillæ of the derma 19
Papillary layer of the derma 19
Papula, definition 68, 71
Papulæ, Willan's first order 171
  epidermicæ 94, 671
  flavæ epithelii 94, 671
Papulous eruptions 171
Parker, Langston, on syphilis 504
Paterson, cases of molluscum 688
Pathology of the skin 64
Pearly tubercles 697
Pediculus capitis 717
  corporis 718
  ferox 719
  pubis 719
Pellagra 222
Pemphigus 76, 272
  acutus 273
  apyreticus 273
  benignus 273
  chronicus 273
  confertus 273
  confluens 273
  congenitus 273
  contagiosus 273
  diutinus 273
  foliaceus 275
  gangrenosus 275
  infantilis 273
  iris 266
  ozænodes 273
  pruriginosus 265, 276

PAGE
Pemphigus pyreticus . . . 273
  simultaneus . . . 273
  solitarius . . . 275
  successivus . . . 273
  variolodes . . . 428
  vulgaris . . . 273
Pemphix . . . 272
Pereira, case of melanoderma . . . 596
Pernio . . . 736
Perspiration . . . 32, 58
  chemical composition of . . . 62
  colored . . . 710
  disorders of . . . 702
  morbid . . . 63, 702
Perspiratory glands . . . 30
  tubes . . . 32
Petechia . . . 311
Petechiæ . . . 311
  mendaces . . . 308
  post-vaccine . . . 450
  sine febre . . . 308
Petechial scurvy . . . 308
Phacia . . . 606
Phœnicismus . . . 386
Phœnigmus petechialis . . . 308
Phlebectasia . . . 305
Phlyctænæ . . . 74
Phlyzacia . . . 278
Phtheiriasis . . . 717
Phyma . . . 282
  anthrax . . . 285
  furunculus . . . 282
  hordeolum . . . 285
  sycosis . . . 667
Physiology of the skin . . . 53
Phyto-alopecia . . . 642
Phytodermic affections . . . 614
Pian . . . 465
Picton, treatment of variola . . . 428
Piebald skin . . . 611
Pigment, chemistry of . . . 29
  cells . . . 27, 29
Pigmentary diseases . . . 87, 593
  nævi . . . 603
Pilous nævi . . . 603, 624
Pimply diseases . . . 171
Pinta . . . 603
Pityriasis . . . 164
  capitis . . . 164
  decalvans . . . 642
  foliacea . . . 168
    rubra . . . 168
  nigra . . . 164
  rubra . . . 164, 165
  versicolor . . . 164
  vulgaris . . . 164
Plenck, classification . . . 101
Plica, polonica . . . 649
  caudiformis . . . 649
  multiformis . . . 649
Pompholyx . . . 272
  solitarius . . . 275
Porcupine disease . . . 323
Pores of the sudoriferous ducts . . . 31
Porphyra . . . 308
  hæmorrhagica . . . 313
  nautica . . . 314
  senilis . . . 314
  simplex . . . 311
Porrigo . . . 138, 6
  asbestina . . .

PAGE
Porrigo circinata . . . 642
  decalvans . . . 629
  favosa . . . 634
  furfuracea . . . 138, 145
  furfurans . . . 642
  granulata . . . 145
  larvalis . . . 146
  lupinoso . . . 654
  scutulata . . . 643
  tonsoria . . . 642
Porrigophyta . . . 644
Prickly heat . . . 176
  Johnson's observations . . . 177
  Winterbottom's . . . 178
Pruna . . . 283
Prurigo . . . 299
  formicans . . . 301
  mitis . . . 174, 301
  senilis . . . 301
  vulgaris . . . 301
Pruritus . . . 66, 297
  ani . . . 297
  præputii . . . 298
  pudendi . . . 298
  scroti . . . 297
  urethræ . . . 298
Psora . . . 122, 131
  humida . . . 139
  lepra . . . 131
  porrigo . . . 131
  sicca . . . 139
Psoriasis . . . 162, 333
  circumscripta . . . 336
  discoidea . . . 336
  eczematosa . . . 162
  figurata . . . 162
  furfuracea . . . 164
  infantilis . . . 147
  leprodes . . . 162
  nummularis . . . 336
  orbicularis . . . 336
  palmaris . . . 163
  squamosa rubra . . . 166
Psorophthalmia . . . 140
Psydracia . . . 189
Pterygium unguis . . . 616
Pulex irritans . . . 720
  penetrans . . . 721
Puncture in erysipelas . . . 237
Purpura . . . 308
  apyreta . . . 308
  cachectica . . . 313
  chronica . . . 308
  hæmorrhagica . . . 313
  nautica . . . 314
  pathology of . . . 87
  pemphigoides . . . 310
  senilis . . . 314
  simplex . . . 311
  urticans . . . 314
Pustula, definition . . . 69
  Aleppensis . . . 294
  gangrænosa . . . 293
  maligna . . . 293
Pustulæ . . . 78
Pustular eruptions . . . 278
Pustule, definition of . . . 68
Pyrophlyctis endemica . . . 294
ringworm . . . 217
naistica . . . 222

PAGE

- Raspail, on the acarus scabiei . . . 747
- Rayer, classification . . . 104
- Red-gown, or red-gum rash . . . 174
- Remedies for the skin . . . 115
  - constitutional . . . 119
  - local . . . 116
- Renucci, on the acarus scabiei . . . 746
- Rete Malpighianum . . . 17
- Rete mucosum . . . 17
- Retro-vaccination . . . 457
- Revaccination . . . 453
- Ringworm, common . . . 642
  - crusted . . . 654
  - honeycomb . . . 654
  - rainbow . . . 217
  - vesicular . . . 266
- Rosa . . . 227
- Rosalia, *vide* rubeola . . . 386
- Roseola . . . 246
  - æstiva . . . 248
  - annulata . . . 252
  - arthritica . . . 256
  - autumnalis . . . 256
  - cholerica . . . 256
  - corymbosa . . . 248
  - febris continuæ . . . 256
  - infantilis . . . 248
  - maculosa . . . 256
  - miliaris . . . 257
  - orbicularis . . . 472
  - papulata . . . 472
  - punctata . . . 253
  - rheumatica . . . 256
  - syphilitica . . . 471
  - vaccina . . . 256
  - variolosa . . . 256
  - versicolor . . . 472
- Rose-rash . . . 246
- Rosy-drop . . . 192
- Rougeole . . . 386
- Rubeola . . . 386
  - maligna, *vide* rubeola nigra . . . 389
  - nigra . . . 589
  - notha . . . 273, 388
  - rossalia . . . 392
  - sine catarrho . . . 388
  - sine exanthemate . . . 389
  - vulgaris . . . 388
- Rumex gigantea . . . 581
- Rupia . . . 485
  - escharotica . . . 280
  - prominens . . . 486
  - simplex . . . 486
  - syphilitica . . . 485

- St. Anthony's fire . . . 227
- Saracenia purpurea . . . 421
- Sarcoptes hominis . . . 739
- Satyria . . . 517
- Satyriasis . . . 517
- Satyriasmos . . . 517
- Sauriosis . . . 322
  - spinosa . . . 323
  - squamosa . . . 323
- Sauriderma . . . 322
  - spinosum . . . 322
  - squamosum . . . 322
- Savian corpuscles . . . 22
- Scabies . . . 123, 131, 195
  - cachectica . . . 195
  - crustosa . . . 199
  - humida . . . 125, 131
  - lymphatica . . . 195
  - Norwegica . . . 199
  - papuliformis . . . 195
  - purulenta . . . 195
  - sicca . . . 131
- Scabrities unguium . . . 618
- Scalds . . . 726
- Scaliger, on the acarus scabiei . . . 740
- Scall, crusted . . . 189
  - humid . . . 125
  - papulous . . . 278
  - running . . . 125, 138
- Scalled head . . . 664
- Scalp, disease of the . . . 622
  - alopecia . . . 627
  - alphos . . . 357
  - canities . . . 637
  - eczema capitis . . . 138
  - erysipelas . . . 231
  - favus . . . 654
  - narcosis folliculorum . . . 653
  - pityriasis capitis . . . 164
  - psoriasis capitis . . . 162
  - stearrhœa . . . 673
  - tinea capitis . . . 642
  - trichonosis plica . . . 649
    - tonsurans . . . 642
- Scarf skin . . . 17
- Scarlatina . . . 392
  - anginosa . . . 395
  - benigna . . . 394
  - erethrica . . . 394
  - gravior, *vide* maligna . . . 395
  - lævigata . . . 393
  - latens . . . 394
  - maligna . . . 395
  - milliformis . . . 393
  - mitior, *vide* anginosa . . . 395
  - nervosa . . . 395
  - papulosa . . . 393
  - phlyctænosa . . . 393
  - plana . . . 393
  - pustulosa . . . 393
  - putrida . . . 395
  - septica . . . 395
  - simplex . . . 895
  - sine angina, *vide* simplex . . . 395
  - sine eruptione . . . 396
  - sine exanthemate . . . 396
  - torpida . . . 395
  - treatment of . . . 397
  - vesicularis . . . 393
- Scarlet fever . . . 392
- Schaeffer on the acarus scabiei . . . 750
- Sclerosis dermatos . . . 96, 345
- Scorbutic eruption . . . 308
- Scorbutus . . . 314
- Scrofula . . . 367
- Scrofuloderma . . . 368
- Scrofuloderma unguale . . . 368
- Scrofulosis . . . 367
- Scrofulous tubercles . . . 368
- Scrofulous ulcers . . . 368
- Scurf-skin . . . 17
- Scurvy . . . 314
- Sebaceous accumulations . . . 691
  - flux . . . 673
  - secretion . . . 57
    - alteration of . . . 673
    - augmentation of . . . 673

INDEX.

PAGE
ceous secretion, composition of . 58
diminution of 674
retention of 677
tubercles, miliary 697
tumors, encysted 689
small 697
Sebiferous ducts 34
Sebiparous glands 34
system, diseases of 671
Seborrhœa 651, 673
Selene unguis 618
Sensibility of the skin 54
Serous cysts 698
Serres, Bretonneau, and Velpeau, treatment of variola 424
Sessile warts 329
Shingles 261
Simon, acarus folliculorum 755
Skin, sensibility of 54
absorbing power of 55
anatomy of 17
pathology of 64
physiology of 53
Smallpox 402
inoculated 413
modified 410
spurious 409
pathology of 415
Soft corns 333
Spargosis 346
Spasmus periphericus 19
Spedalskhed 518
Spiloplaxia indica 518
Spilus 326
Sporisorium maydis 225
Squama, definition 68
Squamæ 77, 352
Squamous diseases 352
Squarra tondens 642
Stearrhœa 673
capitis 651
cœrulea 676
flavescens 674
nigricans 675
simplex 651, 673
Steatozoon folliculorum 755
Stigmata 311
Stimulant remedies 118
Stone-pock 409, 698
Strophulus 72, 174
albidus 174
candidus 174
confertus 174
intertinctus 174
volaticus 174
Struma 367
Strumous affections 367
Sty, or Stigh 285
Sudamina 269
Sudatoria 702
maligna 704
miliaris 702
partialis 705
simplex 702
Sudoriparous glands 30
system, disorders of . . . 95, 701
Sulphur remedies 766
Sunburn 602, 727
Swine-pox 413
Sycosis 615, 667
coniformis 668

PAGE
Sycosis contagiosa 668
erythematosa 668
ficosa 668
fungosa 668
papulosa 668
pustulosa 668
tuberculosa 668
Syphilis erythematous 471, 499
hereditary 496
infantile 496
lupiform 494
papular 473
pustular 485
secondary 471
tertiary 489
treatment of 502
tubercular 475, 493
Syphilitic affections 467
Syphilitic eruptions 471
ecthyma 485
fever 467
lepra 483
lichen 474
maculæ 473
papulæ 474
pustules 485
roseola 473
rupia 485
tubercles 475, 493
Syphiloderma 467
erythematosum 471, 497
hæreditarium 479
papulosum 474
pilare 488
pustulosum 485
tuberculosum 475, 493
ulcerosum 496
unguale 489
vegetations 493
vesiculosum 485
warts 493
Syphilodermata 467
classified table of 470
hæreditaria 479
mitigata 470
Syphilodermata primitiva 471

Tactile corpuscles 29
Tar remedies 778
Teleangiectasia 303
Terminthus 283
Tertiary syphilis 489
Tetter, branny 164
crusted 189
dry 353
humid 125
Therapeutics of the skin 115
Thomson, Hale, on molluscum . . . 688
Tilesius, case of molluscum . . . 682
Tinea amiantacea 138
capitis 642
favosa 654
furfuracea 138, 145
granulata 138, 145
lupinosa 654
maligna 554
mucosa 138
nummularis 642
tondens 642
Tooth-rash 174
Touch 54

PAGE

- Traumatic affections, 81, 713
- Trichiasis ciliorum, 641
  - coacta, 641
- Trichogenous remedies, 773
- Trichoma, 623
- Trichomonas vaginalis, 758
- Trichomyces tonsurans, 642
- Trichonosis, 615
  - annulata, 644
  - cana, 637
  - decolor, 635
  - erythematosa, 644
  - furfuracea, 642
  - gyrata, 644
  - hirsuties, 623
  - papulosa, 644
  - pathology of, 91
  - pityriasica, 644
  - plica, 649
  - poliosis, 637
  - pustulosa, 644
  - tonsurans, 642
  - versicolor, 636
- Trichophyton tonsurans, 615, 642
- Trichorrhœa, 627
- Tsorat, 563
- Tubercles, cupped, 476
  - miliary, 697
  - pearly, 697
  - syphilitic, 475
- Tubercula, 79
  - miliaria, 607
  - mucosa, 493
  - sebacea, 697
  - syphilitica, 475
    - annulata, 482
    - circumscripta, 479
    - corymbosa, 478
    - disseminata, 481
    - gummata, 495
    - lupiformia, 494
    - mucosa, 493
    - ulcerantia, 484, 494
    - urceolata, 476
- Tuberculum, definition, 69
  - malignum, 380
- Tumores encystici, 689
  - gummati, 495
  - cebacei, 689
  - serosi, 698
- Tumors, atheromatous, 689
  - encysted, 93, 689
  - erectile, 303
  - follicular, 697
  - gummated, 495
  - melicerous, 689
  - sebiparous, 679
- Turkish bath, 55
- Turner, classification, 99
- Tuwhenna, 530
- Tylosis, 331
- Tyria, 592, 628

- Ulceration, 82
- Unctuositas elephantina, 520
- Ungual affections, 616
- Ungues adunci, 617
- Uredo, 239
- Uridrosis, 710
- Uritis, 728
- Urticaria, 239

PAGE

- Urticaria ab ingestis, 241
  - conferta, 241
  - evanida, 241
  - febrilis, 240
  - perstans, 241
  - subcutanea, 242
  - tuberosa, 242

- Vaccination, 441
  - tests, 453
- Vaccinella, 449
- Vaccinia, 432
- Vallecula unguis, 50
- Varicella, 428
  - bullosa, 428
  - cellulosa, 413
  - coniformis, 413
  - globularis, 413
  - lenticularis, 428
  - papularis, 413
  - pustular, 413
  - verrucosa, 413
  - vesicularis, 428
- Varicose venules, 305
- Variola, 402
  - anomala, 409
  - benigna, 409
  - coherens, 403
  - confluens, 403
  - cornea, 409
  - corymbosa, 402, 408
  - discreta, 403
  - inoculated, 413
  - inserta, 413
- Variola maligna, 408
  - nervous, 419
  - papulosa, 409
  - pathology of, 415
  - secondary, 410
  - semiconfluens, 403
  - sine variola, 409
  - vaccina, 432
  - varicelloides, 410
  - variolodes, 410, 412
  - verrucosa, 409
- Variole anomalæ, 409
  - crystallinæ, 428
  - hæmorrhagicæ, 408
  - lymphaticæ, 428
  - nigræ, 408
  - pusillæ, 428
  - vaccinæ, 432
  - verninosæ, 409
  - verrucosæ, 409
  - volaticæ, 428
- Variolation, 413
- Varioloid, 410
- Variolo-vaccination, 457
- Varus, 698
- Vascular affections, 302
  - nævus, 303
- Veins, dermal, 21
  - hypertrophy, 305
- Vellarine, 583
- Velpeau, treatment of erysipelas, 238
- Veronica quinquefolia, 583
- Verruca, 329
  - acrochordon, 328, 679, 681
  - confluens, 330
  - digitata, 330
  - filiformis, 330

PAGE
Verruca lobosa 330
  sessilis 329
Vesicula, definition 69
Vesiculæ 73, 258
Vesicular eruptions 258
Vibices 311
Vienna paste 776
Vigo plaster in variola 425
Vitiligo 513, 585
  albida 353
  alphos 353
  candida 519, 586
  leuce 519
  melas 519
  nigricans 519, 591
Vitiligoidea 672

Wart-pock 409
Warts 329
Washerwoman's itch 141
Water-pox 428
Weber's experiments 54
Wen 689
Wheelworm 716, 739
Whelk 698
White blisters 275
Whitlow 621
Wichmann, on the acarus scabiei . . 744

PAGE
Willan, classification 101, 114
Williams, treatment of erysipelas . . 234
Witt, treatment of scarlatina . . . 307

Xanthelasma 671
  laminosum 672
  palpebrarum 672
  papulosum 671
  planum 671
Xanthochroia 666
Xanthoderma 666
Xanthopathia 666
Xerasia 627
Xeroderma 317
Xeroderma ichthyoides 320
  sauroides 322
  simplex 319
Yaws 465

Zinc ointment, benzoated . . . 771, 777
Zittmann's decoction 775
  treatment of syphilis 504
Zona 261
  herpetica 264
  ignea 261
Zoster 261
Zymotic affections 332

THE END.

HENRY C. LEA'S

(LATE LEA & BLANCHARD'S)

CLASSIFIED CATALOGUE

OF

MEDICAL AND SURGICAL PUBLICATIONS.

In asking the attention of the profession to the works advertised in the following pages, the publisher would state that no pains are spared to secure a continuance of the confidence earned for the publications of the house by their careful selection and accuracy and finish of execution.

The printed prices are those at which books can generally be supplied by booksellers throughout the United States, who can readily procure for their customers any works not kept in stock. Where access to bookstores is not convenient, books will be sent by mail post-paid on receipt of the price, but no risks are assumed either on the money or the books, and no publications but my own are supplied. Gentlemen will therefore in most cases find it more convenient to deal with the nearest bookseller.

An Illustrated Catalogue, of 64 octavo pages, handsomely printed, will be forwarded by mail, postpaid, on receipt of ten cents.

HENRY C. LEA.

Nos. 706 and 708 Sansom St., Philadelphia, May, 1875.

ADDITIONAL INDUCEMENT FOR SUBSCRIBERS TO

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

THREE MEDICAL JOURNALS, containing over 2000 LARGE PAGES,

Free of Postage, for SIX DOLLARS Per Annum.

TERMS FOR 1875:

The American Journal of the Medical Sciences, and The Medical News and Library, both free of postage, } Five Dollars per annum, in advance.

OR

The American Journal of the Medical Sciences, published quarterly (1150 pages per annum), with The Medical News and Library, monthly (384 pp. per annum), and The Monthly Abstract of Medical Science (592 pages per annum). } Six Dollars per annum, in advance.

SEPARATE SUBSCRIPTIONS TO

The American Journal of the Medical Sciences, when not paid for in advance, Five Dollars.

The Medical News and Library, free of postage, in advance, One Dollar.

The Monthly Abstract of Medical Science, free of postage, in advance, Two Dollars and a Half.

It is manifest that only a very wide circulation can enable so vast an amount of valuable practical matter to be supplied at a price so unprecedentedly low. The publisher, therefore, has much gratification in stating that the very great favor with which these periodicals are regarded by the profession promises to render the enterprise a permanent one, and it is with especial pleasure that he acknowledges the valuable assistance spontaneously rendered by so many of the old subscribers to the "Journal," who have kindly made known among their friends the advantages thus offered, and have induced them to subscribe. Relying upon a continuance of these friendly exertions, he hopes to be able to maintain the unexampled rates at which these works

(For "The Obstetrical Journal," see p. 22.)

are now offered, and to succeed in his endeavor to place upon the table of reading practitioner in the United States the equivalent of three large octav umes, at the comparatively trifling cost of SIX DOLLARS *per annum*.

These periodicals are universally known for their high professional standing in several spheres.

I.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES,

EDITED BY ISAAC HAYS, M.D.,

is published Quarterly, on the first of January, April, July, and October. Eac ber contains nearly three hundred large octavo pages, appropriately illus wherever necessary. It has now been issued regularly for over FIFTY years, nearly the whole of which time it has been under the control of the present Throughout this long period, it has maintained its position in the highest medical periodicals both at home and abroad, and has received the cordial sup the entire profession in this country. Among its Collaborators will be found number of the most distinguished names of the profession in every section United States, rendering the department devoted to

ORIGINAL COMMUNICATIONS

full of varied and important matter, of great interest to all practitioners. Thus, 1874, articles have appeared in its pages from nearly one hundred gentlemen highest standing in the profession throughout the United States.*

Following this is the "REVIEW DEPARTMENT," containing extended and im reviews of all important new works, together with numerous elaborate "ANAL AND BIBLIOGRAPHICAL NOTICES" of nearly all the medical publications of the

This is followed by the "QUARTERLY SUMMARY OF IMPROVEMENTS AND DISCO IN THE MEDICAL SCIENCES," classified and arranged under different heads, pre a very complete digest of all that is new and interesting to the physician, abr well as at home.

Thus, during the year 1874, the "JOURNAL" furnished to its subscribers 8 inal Communications, 113 Reviews and Bibliographical Notices, and 305 arti the Quarterly Summaries, making a total of about FIVE HUNDRED articles ema from the best professional minds in America and Europe.

That the efforts thus made to maintain the high reputation of the "JOURNA successful, is shown by the position accorded to it in both America and Europ national exponent of medical progress:—

America continues to take a great place in this class of journals (quarterlies), at the head of which the great work of Dr. Hays, the *American Journal of the Medical Sciences*, still holds its ground, as our quotations have often proved.—*Dublin Med. Press and Circular*, Jan. 31, 1872.

Of English periodicals the *Lancet*, and of American the *Am. Journal of the Medical Sciences*, are to be regarded as necessities to the reading practitioner.—*N. Y. Medical Gazette*, Jan. 7, 1871.

The *American Journal of the Medical Sciences* yields to none in the amount of original and borrowed matter it contains, and has established for reputation in every country where medicine tivated as a science.—*Brit. and For. Med.-C Review*, April, 1871.

This, if not the best, is one of the best-co medical quarterlies in the English language, present number is not by any means inferi predecessors.—*London Lancet*, Aug 23, 187

Almost the only one that circulates every all over the Union and in Europe.—*London Times*, Sept. 5, 1868.

And that it was specifically included in the award of a medal of merit to the lisher in the Vienna Exhibition in 1873.

The subscription price of the "AMERICAN JOURNAL OF THE MEDICAL SCIENCE never been raised during its long career. It is still FIVE DOLLARS per annum when paid for in advance, the subscriber receives in addition the "MEDICAL NEW LIBRARY," making in all about 1500 large octavo pages per annum, free of post

II.

THE MEDICAL NEWS AND LIBRARY

is a monthly periodical of Thirty-two large octavo pages, making 384 pag annum. Its "NEWS DEPARTMENT" presents the current information of the day Clinical Lectures and Hospital Gleanings; while the "LIBRARY DEPARTMENT voted to publishing standard works on the various branches of medical science, separately, so that they can be removed and bound on completion. In this manner subscribers have received, without expense, such works as "Watson's Practice," "Todd and Bowman's Physiology," "West on Children," "Malgaigne's Surgery," &c. &c. With Jan. 1875, will be commenced the publication of Dr. William Stokes's new work on Fever (see p. 14), rendering this a very desirable time for new subscriptions.

---

* Communications are invited f[illegible] in all parts of the country. Elaborate articles by the Editor are paid for by the [illegible]

As stated above, the subscription price of the "Medical News and Library" is One Dollar per annum in advance; and it is furnished without charge to all advance paying subscribers to the "American Journal of the Medical Sciences."

III.

THE MONTHLY ABSTRACT OF MEDICAL SCIENCE.

The publication in England of Ranking's "Half-Yearly Abstract of the Medical Sciences" having ceased with the volume for January, 1874, its place has been supplied in this country by a monthly "Abstract" containing forty-eight large octavo pages each month, thus furnishing in the course of the year about six hundred pages, the same amount of matter as heretofore embraced in the Half-Yearly Abstract. As the discontinuance of the "Ranking" arose from the multiplication of journals appearing more frequently and presenting the same character of material, it has been thought that this plan of monthly issues will better meet the wants of subscribers who will thus receive earlier intelligence of the improvements and discoveries in the medical sciences. The aim of the Monthly Abstract will be to present a careful condensation of all that is new and important in the medical journalism of the world, and all the prominent professional periodicals of both hemispheres will be at the disposal of the Editors.

Subscribers desiring to bind the Abstract will receive on application at the end of each year, a cloth cover, gilt lettered, for the purpose, or it will be sent free by mail on receipt of the postage, which, under existing laws, will be six cents.

The subscription to the "Monthly Abstract," free of postage, is Two Dollars and a Half a year, in advance.

As stated above, however, it will be supplied in conjunction with the "American Journal of the Medical Sciences" and the "Medical News and Library," making in all about Twenty-one Hundred pages per annum, the whole *free of postage*, for Six Dollars a year, in advance.

The first volume of the "Monthly Abstract," from July to December, 1874, can be had by those who desire to have complete sets, if early application be made, for $1 50, forming a handsome octavo volume of 300 pages, cloth.

In this effort to bring so large an amount of practical information within the reach of every member of the profession, the publisher confidently anticipates the friendly aid of all who are interested in the dissemination of sound medical literature. He trusts, especially, that the subscribers to the "American Medical Journal" will call the attention of their acquaintances to the advantages thus offered, and that he will be sustained in the endeavor to permanently establish medical periodical literature on a footing of cheapness never heretofore attempted.

PREMIUM FOR NEW SUBSCRIBERS TO THE "JOURNAL."

Any gentleman who will remit the amount for two subscriptions for 1875, one of which must be for a *new subscriber*, will receive as a premium, free by mail, a copy of "Flint's Essays on Conservative Medicine" (for advertisement of which see p. 15), or of Sturges's Clinical Medicine" (see p. 14), or of the new edition of "Swayne's Obstetric Aphorisms" (see p. 24), or of "Tanner's Clincal Manual" (see p. 5), or of "Chambers's Restorative Medicine" (see p 16), or of "West on Nervous Disorders of Children." (See page 21).

*** Gentlemen desiring to avail themselves of the advantages thus offered will do well to forward their subscriptions at an early day, in order to insure the receipt of complete sets for the year 1875, as the constant increase in the subscription list almost always exhausts the quantity printed shortly after publication.

☞ The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. Where these are not accessible, remittances for the "Journal" may be made at the risk of the publisher, by forwarding in registered letters. Address,

HENRY C. LEA,
Nos. 706 and 708 Sansom St., Philadelphia, Pa.

DUNGLISON (ROBLEY), M. D.,

Late Professor of Institutes of Medicine in Jefferson Medical College, Philadelphia.

MEDICAL LEXICON; A DICTIONARY OF MEDICAL SCIENCE: Containing a concise explanation of the various Subjects and Terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence, and Dentistry. Notices of Climate and of Mineral Waters; Formulæ for Officinal, Empirical, and Dietetic Preparations; with the Accentuation and Etymology of the Terms, and the French and other Synonymes; so as to constitute a French as well as English Medical Lexicon. A New Edition. Thoroughly Revised, and very greatly Modified and Augmented. By RICHARD J. DUNGLISON, M.D. In one very large and handsome royal octavo volume of over 1100 pages. Cloth, $6 50; leather, raised bands, $7 50. (*Just Issued.*)

The object of the author from the outset has not been to make the work a mere lexicon or dictionary of terms, but to afford, under each, a condensed view of its various medical relations, and thus to render the work an epitome of the existing condition of medical science. Starting with this view, the immense demand which has existed for the work has enabled him, in repeated revisions, to augment its completeness and usefulness, until at length it has attained the position of a recognized and standard authority wherever the language is spoken.

Special pains have been taken in the preparation of the present edition to maintain this enviable reputation. During the ten years which have elapsed since the last revision, the additions to the nomenclature of the medical sciences have been greater than perhaps in any similar period of the past, and up to the time of his death the author labored assiduously to incorporate everything requiring the attention of the student or practitioner. Since then, the editor has been equally industrious, so that the additions to the vocabulary are more numerous than in any previous revision. Especial attention has been bestowed on the accentuation, which will be found marked on every word. The typographical arrangement has been much improved, rendering reference much more easy, and every care has been taken with the mechanical execution. The work has been printed on new type, small but exceedingly clear, with an enlarged page, so that the additions have been incorporated with an increase of but little over a hundred pages, and the volume now contains the matter of at least four ordinary octavos.

A book well known to our readers, and of which every American ought to be proud. When the learned author of the work passed away, probably all of us feared lest the book should not maintain its place in the advancing science whose terms it defines. Fortunately, Dr. Richard J. Dunglison, having assisted his father in the revision of several editions of the work, and having been, therefore, trained in the methods and imbued with the spirit of the book, has been able to edit it, not in the patchwork manner so dear to the heart of book editors, so repulsive to the taste of intelligent book readers, but to edit it as a work of the kind should be edited—to carry it on steadily, without jar or interruption, along the grooves of thought it has travelled during its lifetime. To show the magnitude of the task which Dr. Dunglison has assumed and carried through, it is only necessary to state that more than six thousand new subjects have been added in the present edition. Without occupying more space with the theme, we congratulate the editor on the successful completion of his labors, and hope he may reap the well-earned reward of profit and honor.—*Phila. Med. Times*, Jan. 3, 1874.

About the first book purchased by the medical student is the Medical Dictionary. The lexicon explanatory of technical terms is simply a *sine qua non*. In a science so extensive, and with such collaterals as medicine, it is as much a necessity also to the practising physician. To meet the wants of students and most physicians, the dictionary must be condensed while comprehensive, and practical while perspicacious. It was because Dunglison's met these indications that it became at once the dictionary of general use wherever medicine was studied in the English language. In no former revision have the alterations and additions been so great. More than six thousand new subjects and terms have been added. The chief terms have been set in black letter, while the derivatives follow in small caps; an arrangement which greatly facilitates reference. We may safely confirm the hope ventured by the editor "that the work, which possesses for him a filial as well as an individual interest, will be found worthy a continuance of the position so long accorded to it as a standard authority."—*Cincinnati Clinic*, Jan. 10, 1874.

We are glad to see a new edition of this invaluable work, and to find that it has been so thoroughly revised, and so greatly improved. The dictionary, in its present form, is a medical library in itself, and one of which every physician should be possessed.—*N. Y. Med. Journal*, Feb. 1874.

With a history of forty years of unexampled success and universal indorsement by the medical profession of the western continent, it would be presumption in any living medical American to essay its review. No reviewer, however able, can add to its fame; no captious critic, however caustic, can remove a single stone from its firm and enduring foundation. It is destined, as a colossal monument, to perpetuate the solid and richly deserved fame of Robley Dunglison to coming generations. The large additions made to the vocabulary, we think, will be welcomed by the profession as supplying the want of a lexicon fully up with the march of science, which has been increasingly felt for some years past. The accentuation of terms is very complete, and, as far as we have been able to examine it, very excellent. We hope it may be the means of securing greater uniformity of pronunciation among medical men.—*Atlanta Med. and Surg. Journ.*, Feb. 1874.

It would be mere waste of words in us to express our admiration of a work which is so universally and deservedly appreciated. The most admirable work of its kind in the English language.—*Glasgow Medical Journal*, January, 1866.

A work to which there is no equal in the English language.—*Edinburgh Medical Journal.*

Few works of the class exhibit a grander monument of patient research and of scientific lore. The extent of the sale of this lexicon is sufficient to testify to its usefulness, and to the great service conferred by Dr. Robley Dunglison on the profession, and indeed on others, by its issue.—*London Lancet*, May 13, 1865.

It has the rare merit that it certainly has no rival in the English language for accuracy and extent of references.—*London Medical Gazette.*

HOBLYN (RICHARD D.), M. D.

A DICTIONARY OF THE TERMS USED IN MEDICINE AND THE COLLATERAL SCIENCES. Revised, with numerous additions, by ISAAC HAYS, M. D., Editor of the "American Journal of the Medical Sciences." In one large royal 12mo. volume of over 500 double-columned pages; cloth, $1 50; leather, $2 00.

It is the best book of definitions we have, and ought always to be upon the student's table.—*Southern Med. and Surg. Journal.*

NEILL (JOHN), M.D., and SMITH (FRANCIS G.), M.D.,

Prof. of the Institutes of Medicine in the Univ. of Penna.

AN ANALYTICAL COMPENDIUM OF THE VARIOUS BRANCHES OF MEDICAL SCIENCE; for the Use and Examination of Students. A new edition, revised and improved. In one very large and handsomely printed royal 12mo. volume, of about one thousand pages, with 374 wood cuts, cloth, $4; strongly bound in leather, with raised bands, $4 75.

The Compend of Drs. Neill and Smith is incomparably the most valuable work of its class ever published in this country. Attempts have been made in various quarters to squeeze Anatomy, Physiology, Surgery, the Practice of Medicine, Obstetrics, Materia Medica, and Chemistry into a single manual; but the operation has signally failed in the hands of all up to the advent of "Neill and Smith's" volume, which is quite a miracle of success. The outlines of the whole are admirably drawn and illustrated, and the authors are eminently entitled to the grateful consideration of the student of every class.—*N. O. Med. and Surg. Journal.*

There are but few students or practitioners of medicine unacquainted with the former editions of this unassuming though highly instructive work. The whole science of medicine appears to have been sifted, as the gold-bearing sands of El Dorado, and the precious facts treasured up in this little volume. A complete portable library so condensed that the student may make it his constant pocket companion.—*Western Lancet.*

In the rapid course of lectures, where work for the students is heavy, and review necessary for an examination, a compend is not only valuable, but it is almost a *sine qua non*. The one before us is, in most of the divisions, the most unexceptionable of all books of the kind that we know of. Of course it is useless for us to recommend it to all last course students, but there is a class to whom we very sincerely commend this cheap book as worth its weight in silver—that class is the graduates in medicine of more than ten years' standing, who have not studied medicine since. They will perhaps find out from it that the science is not exactly now what it was when they left it off.—*The Stethoscope.*

HARTSHORNE (HENRY), M. D.,

Professor of Hygiene in the University of Pennsylvania.

A CONSPECTUS OF THE MEDICAL SCIENCES; containing Handbooks on Anatomy, Physiology, Chemistry, Materia Medica, Practical Medicine, Surgery, and Obstetrics. Second Edition, thoroughly revised and improved. In one large royal 12mo. volume of more than 1000 closely printed pages, with 477 illustrations on wood. Cloth, $4 25; leather, $5 00. (*Lately Issued.*)

The favor with which this work has been received has stimulated the author in its revision to render it in every way fitted to meet the wants of the student, or of the practitioner desirous to refresh his acquaintance with the various departments of medical science. The various sections have been brought up to a level with the existing knowledge of the day, while preserving the condensation of form by which so vast an accumulation of facts have been brought within so narrow a compass. The series of illustrations has been much improved, while by the use of a smaller type the additions have been incorporated without increasing unduly the size of the volume.

The work before us has already successfully asserted its claim to the confidence and favor of the profession; it but remains for us to say that in the present edition the whole work has been fully overhauled and brought up to the present status of the science.—*Atlanta Med. and Surg. Journal*, Sept. 1874.

The work is intended as an aid to the medical student, and as such appears to admirably fulfil its object by its excellent arrangement, the full compilation of facts, the perspicuity and terseness of language, and the clear and instructive illustrations in some parts of the work.—*American Journ. of Pharmacy*, Philadelphia, July, 1874.

The volume will be found useful, not only to students, but to many others who may desire to refresh their memories with the smallest possible expenditure of time.—*N. Y. Med. Journal*, Sept. 1874.

The student will find this the most convenient and useful book of the kind on which he can lay his hand.—*Pacific Med. and Surg. Journ.*, Aug. 1874.

LUDLOW (J. L.), M. D.

A MANUAL OF EXAMINATIONS upon Anatomy, Physiology, Surgery, Practice of Medicine, Obstetrics, Materia Medica, Chemistry, Pharmacy, and Therapeutics. To which is added a Medical Formulary. Third edition, thoroughly revised and greatly extended and enlarged. With 370 illustrations. In one handsome royal 12mo. volume of 816 large pages, cloth, $3 25; leather, $3 75.

The arrangement of this volume in the form of question and answer renders it especially suitable for the office examination of students, and for those preparing for graduation.

TANNER (THOMAS HAWKES), M. D., &c.

A MANUAL OF CLINICAL MEDICINE AND PHYSICAL DIAGNOSIS. Third American from the Second London Edition. Revised and Enlarged by TILBURY FOX, M. D., Physician to the Skin Department in University College Hospital, &c. In one neat volume small 12mo., of about 375 pages, cloth, $1 50.

⁂ By reference to the "Prospectus of Journal" on page 3, it will be seen that this work is offered as a premium for procuring new subscribers to the "AMERICAN JOURNAL OF THE MEDICAL SCIENCES."

Taken as a whole, it is the most compact vade mecum for the use of the advanced student and junior practitioner with which we are acquainted.—*Boston Med. and Surg. Journal*, Sept. 22, 1870.

It contains so much that is valuable, presented in so attractive a form, that it can hardly be spared even in the presence of more full and complete works. Its convenient size makes it a valuable companion to the country practitioner, and if constantly carried by him, would often render him good service, and relieve many a doubt and perplexity.—*Leavenworth Med. Herald, July*, 1870.

The objections commonly, and justly, urged against the general run of "compends," "conspectuses," and other aids to indolence, are not applicable to this little volume, which contains in concise phrase just those practical details that are of most use in daily diagnosis, but which the young practitioner finds it difficult to carry always in his memory without some quickly accessible means of reference. Altogether, the book is one which we can heartily commend to those who have not opportunity for extensive reading, or who, having read much, still wish an occasional practical reminder.—N. Y. Med. Gazette, Nov. 10 1870.

GRAY (*HENRY*), *F.R.S.*,

Lecturer on Anatomy at St. George's Hospital, London.

ANATOMY, DESCRIPTIVE AND SURGICAL. The Drawings by H. V. CARTER, M. D., late Demonstrator on Anatomy at St. George's Hospital; the Dissections jointly by the AUTHOR and DR. CARTER. A new American, from the fifth enlarged and improved London edition. In one magnificent imperial octavo volume, of nearly 900 pages, with 465 large and elaborate engravings on wood. Price in cloth, $6 00; leather, raised bands, $7 00. (*Just Issued.*)

The author has endeavored in this work to cover a more extended range of subjects than is customary in the ordinary text-books, by giving not only the details necessary for the student, but also the application of those details in the practice of medicine and surgery, thus rendering it both a guide for the learner, and an admirable work of reference for the active practitioner. The engravings form a special feature in the work, many of them being the size of nature, nearly all original, and having the names of the various parts printed on the body of the cut, in place of figures of reference, with descriptions at the foot. They thus form a complete and splendid series, which will greatly assist the student in obtaining a clear idea of Anatomy, and will also serve to refresh the memory of those who may find in the exigencies of practice the necessity of recalling the details of the dissecting room; while combining, as it does, a complete Atlas of Anatomy, with a thorough treatise on systematic, descriptive, and applied Anatomy, the work will be found of essential use to all physicians who receive students in their offices, relieving both preceptor and pupil of much labor in laying the groundwork of a thorough medical education.

Notwithstanding the enlargement of this edition, it has been kept at its former very moderate price, rendering it one of the cheapest works now before the profession.

The illustrations are beautifully executed, and render this work an indispensable adjunct to the library of the surgeon. This remark applies with great force to those surgeons practising at a distance from our large cities, as the opportunity of refreshing their memory by actual dissection is not always attainable.—*Canada Med. Journal*, Aug. 1870.

The work is too well known and appreciated by the profession to need any comment. No medical man can afford to be without it, if its only merit were to serve as a reminder of that which so soon becomes forgotten, when not called into frequent use, viz., the relations and names of the complex organism of the human body. The present edition is much improved. —*California Med. Gazette*, July, 1870.

Gray's Anatomy has been so long the standard of perfection with every student of anatomy, that we need do no more than call attention to the improvement in the present edition.—*Detroit Review of Med. and Pharm.*, Aug. 1870.

From time to time, as successive editions have appeared, we have had much pleasure in expressing the general judgment of the wonderful excellence of Gray's Anatomy.—*Cincinnati Lancet*, July, 1870.

Altogether, it is unquestionably the most complete and serviceable text-book in anatomy that has ever been presented to the student, and forms a striking contrast to the dry and perplexing volumes on the same subject through which their predecessors struggled in days gone by.—*N. Y. Med. Record*, June 15, 1870.

To commend Gray's Anatomy to the medical profession is almost as much a work of supererogation as it would be to give a favorable notice of the Bible in the religious press. To say that it is the most complete and conveniently arranged text-book of its kind, is to repeat what each generation of students has learned as a tradition of the elders, and verified by personal experience.—*N. Y. Med. Gazette*, Dec. 17, 1870.

SMITH (*HENRY H.*), *M.D.*, *and* HORNER (*WILLIAM E.*), *M.D.*,

Prof. of Surgery in the Univ. of Penna., &c. *Late Prof. of Anatomy in the Univ. of Penna., &c.*

AN ANATOMICAL ATLAS, illustrative of the Structure of the Human Body. In one volume, large imperial octavo, cloth, with about six hundred and fifty beautiful figures. $4 50.

The plan of this Atlas, which renders it so peculiarly convenient for the student, and its superb artistical execution, have been already pointed out. We must congratulate the student upon the completion of this Atlas, as it is the most convenient work of the kind that has yet appeared; and we must add, the very beautiful manner in which it is "got up," is so creditable to the country as to be flattering to our national pride.—*American Medical Journal.*

SHARPEY (*WILLIAM*), *M.D.*, *and* QUAIN (*JONES & RICHARD*).

HUMAN ANATOMY. Revised, with Notes and Additions, by JOSEPH LEIDY, M. D., Professor of Anatomy in the University of Pennsylvania. Complete in two large octavo volumes, of about 1300 pages, with 511 illustrations; cloth, $6 00.

The very low price of this standard work, and its completeness in all departments of the subject, should command for it a place in the library of all anatomical students.

HODGES (*RICHARD M.*), *M.D.*,

Late Demonstrator of Anatomy in the Medical Department of Harvard University.

PRACTICAL DISSECTIONS. Second Edition, thoroughly revised. In one neat royal 12mo. volume, half-bound, $2 00.

The object of this work is to present to the anatomical student a clear and concise description of that which he is expected to observe in an ordinary course of dissections. The author has endeavored to omit unnecessary details, and to present the subject in the form which many years' experience has shown him to be the most convenient and intelligible to the student. In the revision of the present edition, he has sedulously labored to render the volume more worthy of the favor with which it has heretofore been received.

HORNER'S SPECIAL ANATOMY AND HISTOLOGY. Eighth edition, extensively revised and modified. In 2 vols. 8vo., of over 1000 pages, with more than 300 wood-cuts; cloth, $6 00

WILSON (ERASMUS), F.R.S.

A SYSTEM OF HUMAN ANATOMY, General and Special. Edited by W. H. GOBRECHT, M. D., Professor of General and Surgical Anatomy in the Medical College of Ohio. Illustrated with three hundred and ninety-seven engravings on wood. In one large and handsome octavo volume, of over 600 large pages; cloth, $4 00; leather, $5 00.

The publisher trusts that the well-earned reputation of this long-established favorite will be more than maintained by the present edition. Besides a very thorough revision by the author, it has been most carefully examined by the editor, and the efforts of both have been directed to introducing everything which increased experience in its use has suggested as desirable to render it a complete text-book for those seeking to obtain or to renew an acquaintance with Human Anatomy. The amount of additions which it has thus received may be estimated from the fact that the present edition contains over one-fourth more matter than the last, rendering a smaller type and an enlarged page requisite to keep the volume within a convenient size. The author has not only thus added largely to the work, but he has also made alterations throughout, wherever there appeared the opportunity of improving the arrangement or style, so as to present every fact in its most appropriate manner, and to render the whole as clear and intelligible as possible. The editor has exercised the utmost caution to obtain entire accuracy in the text, and has largely increased the number of illustrations, of which there are about one hundred and fifty more in this edition than in the last, thus bringing distinctly before the eye of the student everything of interest or importance.

HEATH (CHRISTOPHER), F. R. C. S.,

Teacher of Operative Surgery in University College, London.

PRACTICAL ANATOMY: A Manual of Dissections. From the Second revised and improved London edition. Edited, with additions, by W. W. KEEN, M. D., Lecturer on Pathological Anatomy in the Jefferson Medical College, Philadelphia. In one handsome royal 12mo. volume of 578 pages, with 247 illustrations. Cloth $3 50; leather, $4 00. (*Lately Published.*)

Dr. Keen, the American editor of this work, in his preface, says: "In presenting this American edition of 'Heath's Practical Anatomy,' I feel that I have been instrumental in supplying a want long felt for a *real* dissector's manual," and this assertion of its editor we deem is fully justified, after an examination of its contents, for it is really an excellent work. Indeed, we do not hesitate to say, the best of its class with which we are acquainted; resembling Wilson in terse and clear description, excelling most of the so-called practical anatomical dissectors in the scope of the subject and practical selected matter. . . . In reading this work, one is forcibly impressed with the great pains the author takes to impress the subject upon the mind of the student. He is full of rare and pleasing little devices to aid memory in maintaining its hold upon the slippery slopes of anatomy.—*St. Louis Med. and Surg. Journal*, Mar. 10, 1871.

It appears to us certain that, as a guide in dissection, and as a work containing facts of anatomy in brief and easily understood form, this manual is complete. This work contains, also, very perfect illustrations of parts which can thus be more easily understood and studied; in this respect it compares favorably with works of much greater pretension. Such manuals of anatomy are always favorite works with medical students. We would earnestly recommend this one to their attention; it has excellences which make it valuable as a guide in dissecting, as well as in studying anatomy.—*Buffalo Medical and Surgical Journal*, Jan. 1871.

BELLAMY (E.), F.R.C.S.

THE STUDENT'S GUIDE TO SURGICAL ANATOMY: A Text-Book for Students preparing for their Pass Examination. With engravings on wood. In one handsome royal 12mo. volume. Cloth, $2 25. (*Just Issued.*)

We welcome Mr. Bellamy's work, as a contribution to the study of regional anatomy, of equal value to the student and the surgeon. It is written in a clear and concise style, and its practical suggestions add largely to the interest attaching to its technical details.—*Chicago Med. Examiner*, March 1, 1874.

We cordially congratulate Mr. Bellamy upon having produced it.—*Med. Times and Gaz.*

We cannot too highly recommend it.—*Student's Journal.*

Mr. Bellamy has spared no pains to produce a really reliable student's guide to surgical anatomy—one which all candidates for surgical degrees may consult with advantage, and which posseses much original matter.—*Med. Press and Circular.*

MACLISE (JOSEPH).

SURGICAL ANATOMY. By JOSEPH MACLISE, Surgeon. In one volume, very large imperial quarto; with 68 large and splendid plates, drawn in the best style and beautifully colored, containing 190 figures, many of them the size of life; together with copious explanatory letter-press. Strongly and handsomely bound in cloth. Price $14 00.

We know of no work on surgical anatomy which can compete with it.—*Lancet.*

The work of Maclise on surgical anatomy is of the highest value. In some respects it is the best publication of its kind we have seen, and is worthy of a place in the library of any medical man, while the student could scarcely make a better investment than this.—*The Western Journal of Medicine and Surgery.*

No such lithographic illustrations of surgical regions have hitherto, we think, been given. While the operator is shown every vessel and nerve where an operation is contemplated, the exact anatomist is refreshed by those clear and distinct dissections, which every one must appreciate who has a particle of enthusiasm. The English medical press has quite exhausted the words of praise, in recommending this admirable treatise.—*Boston Med. and Surg. Journ.*

HARTSHORNE (HENRY), M.D.,

Professor of Hygiene, etc., in the Univ. of Penna.

HANDBOOK OF ANATOMY AND PHYSIOLOGY. Second Edition, revised. In one royal 12mo. volume, with 220 wood-cuts; cloth, $1 75. (*Just Issued.*)

DALTON (J. C.), M. D.,

Professor of Physiology in the College of Physicians and Surgeons, New York, &c.

A TREATISE ON HUMAN PHYSIOLOGY. Designed for the use of Students and Practitioners of Medicine. Fifth edition, revised, with nearly three hundred illustrations on wood. In one very beautiful octavo volume, of over 700 pages, cloth, $5 25; leather, $6 25.

Preface to the Fifth Edition.

In preparing the present edition of this work, the general plan and arrangement of the previous editions have been retained, so far as they have been found useful and adapted to the purposes of a text-book for students of medicine. The incessant advance of all the natural and physical sciences, never more active than within the last five years, has furnished many valuable aids to the special investigations of the physiologist; and the progress of physiological research, during the same period, has required a careful revision of the entire work, and the modification or rearrangement of many of its parts. At this day, nothing is regarded as of any value in natural science which is not based upon direct and intelligible observation or experiment; and, accordingly, the discussion of doubtful or theoretical questions has been avoided, as a general rule, in the present volume, while new facts, from whatever source, if fully established, have been added and incorporated with the results of previous investigation. A number of new illustrations have been introduced, and a few of the older ones, which seemed to be no longer useful, have been omitted. In all the changes and additions thus made, it has been the aim of the writer to make the book, in its present form, a faithful exponent of the actual conditions of physiological science.

NEW YORK, October, 1871.

In this, the standard text-book on Physiology, all that is needed to maintain the favor with which it is regarded by the profession, is the author's assurance that it has been thoroughly revised and brought up to a level with the advanced science of the day. To accomplish this has required some enlargement of the work, but no advance has been made in the price.

The fifth edition of this truly valuable work on Human Physiology comes to us with many valuable improvements and additions. As a text-book of physiology the work of Prof. Dalton has long been well known as one of the best which could be placed in the hands of student or practitioner. Prof. Dalton has, in the several editions of his work heretofore published, labored to keep step with the advancement in science, and the last edition shows by its improvements on former ones that he is determined to maintain the high standard of his work. We predict for the present edition increased favor, though this work has long been the favorite standard.—*Buffalo Med. and Surg. Journal*, April, 1872.

An extended notice of a work so generally and favorably known as this is unnecessary. It is justly regarded as one of the most valuable text-books on the subject in the English language.—*St. Louis Med. Archives*, May, 1872.

We know no treatise in physiology so clear, complete, well assimilated, and perfectly digested, as Dalton's. He never writes cloudily or dubiously, or in mere quotation. He assimilates all his material, and from it constructs a homogeneous transparent argument, which is always honest and well informed, and hides neither truth, ignorance, nor doubt, so far as either belongs to the subject in hand.—*Brit. Med. Journal*, March 23, 1872.

Dr. Dalton's treatise is well known, and by many highly esteemed in this country. It is, indeed, a good elementary treatise on the subject it professes to teach, and may safely be put into the hands of English students. It has one great merit—it is clear, and, on the whole, admirably illustrated. The part we have always esteemed most highly is that relating to Embryology. The diagrams given of the various stages of development give a clearer view of the subject than do those in general use in this country; and the text may be said to be, upon the whole, equally clear.—*London Med. Times and Gazette*, March 23, 1872.

Dalton's Physiology is already, and deservedly, the favorite text-book of the majority of American medical students. Treating a most interesting department of science in his own peculiarly lively and fascinating style, Dr. Dalton carries his reader along without effort, and at the same time impresses upon his mind the truths taught much more successfully than if they were buried beneath a multitude of words.—*Kansas City Med. Journal*, April, 1872.

Professor Dalton is regarded justly as *the* authority in this country on physiological subjects, and the fifth edition of his valuable work fully justifies the exalted opinion the medical world has of his labors. This last edition is greatly enlarged.—*Virginia Clinical Record*, April, 1872.

DUNGLISON (ROBLEY), M. D.,

Professor of Institutes of Medicine in Jefferson Medical College, Philadelphia.

HUMAN PHYSIOLOGY. Eighth edition. Thoroughly revised and extensively modified and enlarged, with five hundred and thirty-two illustrations. In two large and handsomely printed octavo volumes of about 1500 pages, cloth, $7 00.

LEHMANN (C. G.).

PHYSIOLOGICAL CHEMISTRY. Translated from the second edition by GEORGE E. DAY, M. D., F. R. S., &c., edited by R. E. ROGERS, M. D., Professor of Chemistry in the Medical Department of the University of Pennsylvania, with illustrations selected from Funke's Atlas of Physiological Chemistry, and an Appendix of plates. Complete in two large and handsome octavo volumes, containing 1200 pages, with nearly two hundred illustrations, cloth, $6 00.

BY THE SAME AUTHOR.

MANUAL OF CHEMICAL PHYSIOLOGY. Translated from the German, with Notes and Additions, by J. CHESTON MORRIS, M. D., with an Introductory Essay on Vital Force, by Professor SAMUEL JACKSON, M. D., of the University of Pennsylvania. With illustrations on wood. In one very handsome octavo volume of 336 pages, cloth, $2 25.

ATTFIELD (JOHN), Ph. D.,

Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, &c.

CHEMISTRY, GENERAL, MEDICAL, AND PHARMACEUTICAL; including the Chemistry of the U. S. Pharmacopœia. A Manual of the General Principles of the Science, and their Application to Medicine and Pharmacy. Fifth Edition, revised by the author. In one handsome royal 12mo. volume; cloth, $2 75; leather, $3 25. (*Lately Issued.*)

No other American publication with which we are acquainted covers the same ground, or does it so well. In addition to an admirable exposé of the facts and principles of general elementary chemistry, the author has presented us with a condensed mass of practical matter, just such as the medical student and practitioner needs.—*Cincinnati Lancet*, Mar. 1874.

We commend the work heartily as one of the best text-books extant for the medical student.—*Detroit Rev. of Med. and Pharm.*, Feb. 1872.

The best work of the kind in the English language.—*N. Y. Psychological Journal*, Jan. 1872.

The work is constructed with direct reference to the wants of medical and pharmaceutical students; and, although an English work, the points of difference between the British and United States Pharmacopœias are indicated, making it as useful here as in England. Altogether, the book is one we can heartily recommend to practitioners as well as students.—*N. Y. Med. Journal*, Dec. 1871.

It differs from other text-books in the following particulars: first, in the exclusion of matter relating to compounds which, at present, are only of interest to the scientific chemist; secondly, in containing the chemistry of every substance recognized officially or in general, as a remedial agent. It will be found a most valuable book for pupils, assistants, and others engaged in medicine and pharmacy, and we heartily commend it to our readers.—*Canada Lancet*, Oct. 1871.

When the original English edition of this work was published, we had occasion to express our high appreciation of its worth, and also to review, in considerable detail, the main features of the book. As the arrangement of subjects, and the main part of the text of the present edition are similar to the former publication, it will be needless for us to go over the ground a second time; we may, however, call attention to a marked advantage possessed by the American work—we allude to the introduction of the chemistry of the preparations of the United States Pharmacopœia, as well as that relating to the British authority.—*Canadian Pharmaceutical Journal*, Nov. 1871.

Chemistry has borne the name of being a hard subject to master by the student of medicine, and chiefly because so much of it consists of compounds only of interest to the scientific chemist; in this work such portions are modified or altogether left out, and in the arrangement of the subject matter of the work, practical utility is sought after, and we think fully attained. We commend it for its clearness and order to both teacher and pupil.—*Oregon Med. and Surg. Reporter*, Oct. 1871.

FOWNES (GEORGE), Ph. D.

A MANUAL OF ELEMENTARY CHEMISTRY; Theoretical and Practical. With one hundred and ninety-seven illustrations. A new American, from the tenth and revised London edition. Edited by ROBERT BRIDGES, M. D. In one large royal 12mo. volume, of about 850 pp., cloth, $2 75; leather, $3 25. (*Lately Issued.*)

This work is so well known that it seems almost superfluous for us to speak about it. It has been a favorite text-book with medical students for years, and its popularity has in no respect diminished. Whenever we have been consulted by medical students, as has frequently occurred, what treatise on chemistry they should procure, we have always recommended Fownes', for we regarded it as the best. There is no work that combines so many excellences. It is of convenient size, not prolix, of plain perspicuous diction, contains all the most recent discoveries, and is of moderate price.—*Cincinnati Med. Repertory*, Aug. 1869.

Large additions have been made, especially in the department of organic chemistry, and we know of no other work that has greater claims on the physician, pharmaceutist, or student, than this. We cheerfully recommend it as the best text-book on elementary chemistry, and bespeak for it the careful attention of students of pharmacy.—*Chicago Pharmacist*, Aug. 1869.

Here is a new edition which has been long watched for by eager teachers of chemistry. In its new garb, and under the editorship of Mr. Watts, it has resumed its old place as the most successful of text-books.—*Indian Medical Gazette*, Jan. 1, 1869.

It will continue, as heretofore, to hold the first rank as a text-book for students of medicine.—*Chicago Med. Examiner*, Aug. 1869.

ODLING (WILLIAM),

Lecturer on Chemistry at St. Bartholomew's Hospital, &c.

A COURSE OF PRACTICAL CHEMISTRY, arranged for the Use of Medical Students. With Illustrations. From the Fourth and Revised London Edition. In one neat royal 12mo. volume, cloth, $2.

GALLOWAY (ROBERT), F.C.S.,

Prof. of Applied Chemistry in the Royal College of Science for Ireland, &c.

A MANUAL OF QUALITATIVE ANALYSIS. From the Fifth London Edition. In one neat royal 12mo. volume, with illustrations; cloth, $2 50. (*Just Issued.*)

The success which has carried this work through repeated editions in England, and its adoption as a text-book in several of the leading institutions in this country, show that the author has succeeded in the endeavor to produce a sound practical manual and book of reference for the chemical student.

Prof. Galloway's books are deservedly in high esteem, and this American reprint of the fifth edition (1869) of his Manual of Qualitative Analysis, will be acceptable to many American students to whom the English edition is not accessible.—*Am. Jour. of Science and Arts*, Sept. 1872.

We regard this volume as a valuable addition to the chemical text-books, and as particularly calculated to instruct the student in analytical researches of the inorganic compounds, the important vegetable acids, and of compounds and various secretions and excretions of animal origin.—*Am. Journ. of Pharm.*, Sept. 1872.

BLOXAM (C. L.),

Professor of Chemistry in King's College, London.

CHEMISTRY, INORGANIC AND ORGANIC.

From the Second London Edition. In one very handsome octavo volume, of 700 pages, with about 300 illustrations. Cloth, $4 00; leather, $5 00. (*Lately Issued.*)

It has been the author's endeavor to produce a Treatise on Chemistry sufficiently comprehensive for those studying the science as a branch of general education, and one which a student may use with advantage in pursuing his chemical studies at one of the colleges or medical schools. The special attention devoted to Metallurgy and some other branches of Applied Chemistry renders the work especially useful to those who are being educated for employment in manufacture.

We have in this work a complete and most excellent text-book for the use of schools, and can heartily recommend it as such.—*Boston Med. and Surg. Journ.*, May 28, 1874.

Of all the numerous works upon elementary chemistry that have been published within the last few years, we can point to none that, in fulness, accuracy, and simplicity, can surpass this; while, in the number and detailed descriptions of experiments, as also in the profuseness of its illustrations, we believe it stands above any similar work published in this country. . . . The statements made are clear and concise and every step proved by an abundance of experiments, which excite our admiration as much by their simplicity as by their direct conclusiveness.—*Chicago Med. Examiner*, Nov. 15, 1873.

It is seldom that in the same compass so complete and interesting a compendium of the leading facts of chemistry is offered.—*Druggists' Circular*, Nov. '73

The above is the title of a work which we can most conscientiously recommend to students of chemistry. It is as easy as a work on chemistry could be made, at the same time that it presents a full account of that science as it now stands. We have spoken of the work as admirably adapted to the wants of students; it is quite as well suited to the requirements of practitioners who wish to review their chemistry, or have occasion to refresh their memories on any point relating to it. In a word, it is a book to be read by all who wish to know what is the chemistry of the present day.—*American Practitioner*, Nov. 1873.

Among the various works upon general chemistry issued, we know of none that will supply the average wants of the student or teacher better than this.—*Indiana Journ. of Med.*, Nov. 1873.

We cordially welcome this American reprint of a work which has already won for itself so substantial a reputation in England. Professor Bloxam has condensed into a wonderfully small compass all the important principles and facts of chemical science. Thoroughly imbued with an enthusiastic love for the science he expounds, he has stripped it of all needless technicalities, and rounded out its hard outlines by a fulness of illustration that cannot fail to attract and delight the student. The details of illustrative experiment have been worked up with especial care, and many of the experiments described are both new and striking.—*Detroit Rev. of Med. and Pharm.*, Nov. 1873.

One of the best text-books of chemistry yet published.—*Chicago Med. Journ.*, Nov. 1873.

This is an excellent work, well adapted for the beginner and the advanced student of chemistry.—*Am. Journ. of Pharm.*, Nov. 1873.

Probably the most valuable, and at the same time practical, text-book on general chemistry extant in our language.—*Kansas City Med. Journ.*, Dec. 1873.

Prof. Bloxam possesses pre-eminently the inestimable gift of perspicuity. It is a pleasure to read his books, for he is capable of making very plain what other authors frequently have left very obscure.—*Va. Clinical Record*, Nov. 1573.

It would be difficult for a practical chemist and teacher to find any material fault with this most admirable treatise. The author has given us almost a cyclopedia within the limits of a convenient volume, and has done so without penning the *useless* paragraphs too commonly making up a great part of the bulk of many cumbrous works. The progressive scientist is not disappointed when he looks for the record of new and valuable processes and discoveries, while the cautious conservative does not find its pages monopolized by uncertain theories and speculations. A peculiar point of excellence is the crystallized form of expression in which great truths are expressed in very short paragraphs. One is surprised at the brief space allotted to an important topic, and yet, after reading it, he feels that little, if any more, should have been said. Altogether, it is seldom you see a text-book so nearly faultless.—*Cincinnati Lancet*, Nov. 1873.

Professor Bloxam has given us a most excellent and useful practical treatise. His 666 pages are crowded with facts and experiments, nearly all well chosen, and many quite new, even to scientific men. . . . It is astonishing how much information he often conveys in a few paragraphs. We might quote fifty instances of this.—*Chemical News.*

WÖHLER AND FITTIG.

OUTLINES OF ORGANIC CHEMISTRY.

Translated with Additions from the Eighth German Edition. By IRA REMSEN, M.D., Ph.D., Professor of Chemistry and Physics in Williams College, Mass. In one handsome volume, royal 12mo. of 550 pp., cloth, $3.

As the numerous editions of the original attest, this work is the leading text-book and standard authority throughout Germany on its important and intricate subject—a position won for it by the clearness and conciseness which are its distinguishing characteristics. The translation has been executed with the approbation of Profs. Wöhler and Fittig, and numerous additions and alterations have been introduced, so as to render it in every respect on a level with the most advanced condition of the science.

BOWMAN (JOHN E.), M. D.

PRACTICAL HANDBOOK OF MEDICAL CHEMISTRY.

Edited by C. L. BLOXAM, Professor of Practical Chemistry in King's College, London. Sixth American, from the fourth and revised English Edition. In one neat volume, royal 12mo., pp. 351, with numerous illustrations, cloth, $2 25.

BY THE SAME AUTHOR. (*Lately Issued.*)

INTRODUCTION TO PRACTICAL CHEMISTRY, INCLUDING ANALYSIS.

Sixth American, from the sixth and revised London edition. With numerous illustrations. In one neat vol., royal 12mo., cloth, $2 25.

KNAPP'S TECHNOLOGY; or Chemistry Applied to the Arts, and to Manufactures. With American additions, by Prof. WALTER R. JOHNSON. In two very handsome octavo volumes, with 500 wood engravings, cloth, $6 00.

GRIFFITH (ROBERT E.), M.D.

A UNIVERSAL FORMULARY, Containing the Methods of Preparing and Administering Officinal and other Medicines. The whole adapted to Physicians and Pharmaceutists. Third edition, thoroughly revised, with numerous additions, by JOHN M. MAISCH, Professor of Materia Medica in the Philadelphia College of Pharmacy. In one large and handsome octavo volume of about 800 pages, cloth, $4 50; leather, $5 50. (*Just Issued.*)

This work has long been known for the vast amount of information which it presents in a condensed form, arranged for easy reference. The new edition has received the most careful revision at the competent hands of Professor Maisch, who has brought the whole up to the standard of the most recent authorities. More than eighty new headings of remedies have been introduced, the entire work has been thoroughly remodelled, and whatever has seemed to be obsolete has been omitted. As a comparative view of the United States, the British, the German, and the French Pharmacopœias, together with an immense amount of unofficinal formulas, it affords to the practitioner and pharmaceutist an aid in their daily avocations not to be found elsewhere, while three indexes, one of "Diseases and their Remedies," one of Pharmaceutical Names, and a General Index, afford an easy key to the alphabetical arrangement adopted in the text.

The young practitioner will find the work invaluable in suggesting eligible modes of administering many remedies.—*Am. Journ. of Pharm.*, Feb. 1874.

Our copy of Griffith's Formulary, after long use, first in the dispensing shop, and afterwards in our medical practice, had gradually fallen behind in the onward march of materia medica, pharmacy, and therapeutics, until we had ceased to consult it as a daily book of reference. So completely has Prof. Maisch reformed, remodelled, and rejuvenated it in the new edition, we shall gladly welcome it back to our table again beside Dunglison, Webster, and Wood & Bache. The publisher could not have been more fortunate in the selection of an editor. Prof. Maisch is eminently the man for the work, and he has done it thoroughly and ably. To enumerate the alterations, amendments, and additions would be an endless task; everywhere we are greeted with the evidences of his labor. Following the Formulary, is an addendum of useful Recipes, Dietetic Preparations, List of Incompatibles, Posological table, table of Pharmaceutical Names, Officinal Preparations and Directions, Poisons, Antidotes and Treatment, and copious indices, which afford ready access to all parts of the work. We unhesitatingly commend the book as being the best of its kind, within our knowledge.—*Atlanta Med. and Surg. Journ.*, Feb. 1874.

To the druggist a good formulary is simply indispensable, and perhaps no formulary has been more extensively used than the well-known work before us. Many physicians have to officiate, also, as druggists. This is true especially of the country physician, and a work which shall teach him the means by which to administer or combine his remedies in the most efficacious and pleasant manner, will always hold its place upon his shelf. A formulary of this kind is of benefit also to the city physician in largest practice.—*Cincinnati Clinic*, Feb. 21, 1874.

The Formulary has already proved itself acceptable to the medical profession, and we do not hesitate to say that the third edition is much improved, and of greater practical value, in consequence of the careful revision of Prof. Maisch.—*Chicago Med. Examiner*, March 15, 1874.

A more complete formulary than it is in its present form the pharmacist or physician could hardly desire. To the first some such work is indispensable, and it is hardly less essential to the practitioner who compounds his own medicines. Much of what is contained in the introduction ought to be committed to memory by every student of medicine. As a help to physicians it will be found invaluable, and doubtless will make its way into libraries not already supplied with a standard work of the kind.—*The American Practitioner*, Louisville, July, '74.

ELLIS (BENJAMIN), M.D.

THE MEDICAL FORMULARY: being a Collection of Prescriptions derived from the writings and practice of many of the most eminent physicians of America and Europe. Together with the usual Dietetic Preparations and Antidotes for Poisons. The whole accompanied with a few brief Pharmaceutic and Medical Observations. Twelfth edition, carefully revised and much improved by ALBERT H. SMITH, M.D. In one volume 8vo. of 376 pages, cloth, $3 00.

PEREIRA (JONATHAN), M.D., F.R.S. and L.S.

MATERIA MEDICA AND THERAPEUTICS; being an Abridgment of the late Dr. Pereira's Elements of Materia Medica, arranged in conformity with the British Pharmacopœia, and adapted to the use of Medical Practitioners, Chemists and Druggists, Medical and Pharmaceutical Students, &c. By F. J. FARRE, M.D., Senior Physician to St. Bartholomew's Hospital, and London Editor of the British Pharmacopœia; assisted by ROBERT BENTLEY, M.R.C.S., Professor of Materia Medica and Botany to the Pharmaceutical Society of Great Britain; and by ROBERT WARINGTON, F.R.S., Chemical Operator to the Society of Apothecaries. With numerous additions and references to the United States Pharmacopœia, by HORATIO C. WOOD, M.D., Professor of Botany in the University of Pennsylvania. In one large and handsome octavo volume of 1040 closely printed pages, with 236 illustrations, cloth, $7 00; leather, raised bands, $8 00.

DUNGLISON'S NEW REMEDIES, WITH FORMULÆ FOR THEIR PREPARATION AND ADMINISTRATION. Seventh edition, with extensive additions. One vol. 8vo., pp. 770; cloth. $4 00.

ROYLE'S MATERIA MEDICA AND THERAPEUTICS. Edited by JOSEPH CARSON, M.D. With ninety-eight illustrations. 1 vol. 8vo., pp. 700, cloth. $3 00.

CARSON'S SYNOPSIS OF THE LECTURES ON MATERIA MEDICA AND PHARMACY, delivered in the University of Pennsylvania. Fourth and revised edition. Cloth, $3.

CHRISTISON'S DISPENSATORY. With copious additions, and 213 large wood-engravings. By R. EGLESFELD GRIFFITH, M.D. One vol. 8vo., pp. 1000; cloth. $4 00.

CARPENTER'S PRIZE ESSAY ON THE USE OF ALCOHOLIC LIQUORS IN HEALTH AND DISEASE. New edition, with a Preface by D. F. CONDIE, M.D., and explanations of scientific words. In one neat 12mo. volume, pp. 178, cloth. 60 cents.

DE JONGH ON THE THREE KINDS OF COD-LIVER OIL, with their Chemical and Therapeutic Properties. 1 vol. 12mo., cloth, 75 cents.

FENWICK (SAMUEL), M.D.,

Assistant Physician to the London Hospital.

THE STUDENT'S GUIDE TO MEDICAL DIAGNOSIS. From the Third Revised and Enlarged English Edition. With eighty-four illustrations on wood. In one very handsome volume, royal 12mo., cloth, $2 25. (*Just Issued.*)

The very great success which this work has obtained in England, shows that it has supplied an admitted want among elementary books for the guidance of students and junior practitioners. Taking up in order each portion of the body or class of disease, the author has endeavored to present in simple language the value of symptoms, so as to lead the student to a correct appreciation of the pathological changes indicated by them. The latest investigations have been carefully introduced into the present edition, so that it may fairly be considered as on a level with the most advanced condition of medical science.

Of the many guide-books on medical diagnosis, claimed to be written for the special instruction of students, this is the best. The author is evidently a well read and accomplished physician, and he knows how to teach practical medicine. The charm of simplicity is not the least interesting feature in the manner in which Dr. Fenwick conveys instruction. There are few books of this size on practical medicine that contain so much and convey it so well as the volume before us. It is a book we can sincerely recommend to the student for direct instruction, and to the practitioner as a ready and useful aid to his memory.—*Am. Journ. of Syphilography*, Jan. 1874.

It covers the ground of medical diagnosis in a concise, practical manner, well calculated to assist the student in forming a correct, thorough, and systematic method of examination and diagnosis of disease. The illustrations are numerous, and finely executed. Those illustrative of the microscopic appearance of morbid tissue, &c., are especially clear and distinct. —*Chicago Med. Examiner*, Nov. 1873.

So far superior to any offered to students that the colleges of this country should recommend it to their respective classes.—*N. O. Med. and Surg. Journ.*, March, 1874.

This little book ought to be in the possession of every medical student.—*Boston Medical and Surg. Journ.*, Jan. 15, 1874.

GREEN (T. HENRY), M.D.,

Lecturer on Pathology and Morbid Anatomy at Charing-Cross Hospital Medical School.

PATHOLOGY AND MORBID ANATOMY. With numerous Illustrations on Wood. In one very handsome octavo volume of over 250 pages, cloth, $2 50. (*Lately Published.*)

We have been very much pleased by our perusal of this little volume. It is the only one of the kind with which we are acquainted, and practitioners as well as students will find it a very useful guide; for the information is up to the day, well and compactly arranged, without being at all scanty.—*London Lancet*, Oct. 7, 1871.

It embodies in a comparatively small space a clear statement of the present state of our knowledge of pathology and morbid anatomy. The author shows that he has been not only a student of the teachings of his *confrères* in this branch of science, but a practical and conscientious laborer in the post-mortem chamber. The work will prove a useful one to the great mass of students and practitioners whose time for devotion to this class of studies is limited.—*Am. Journ. of Syphilography*, April, 1872.

GLUGE'S ATLAS OF PATHOLOGICAL HISTOLOGY. Translated, with Notes and Additions, by JOSEPH LEIDY, M. D. In one volume, very large imperial quarto, with 320 copper-plate figures, plain and colored, cloth. $4 00.

JONES AND SIEVEKING'S PATHOLOGICAL ANATOMY. With 397 wood-cuts. 1 vol. 8vo., of nearly 750 pages, cloth. $3 50.

HOLLAND'S MEDICAL NOTES AND REFLECTIONS. 1 vol. 8vo., pp. 500, cloth. $3 50

WHAT TO OBSERVE AT THE BEDSIDE AND AFTER DEATH IN MEDICAL CASES. Published under the authority of the London Society for Medical Observation. From the second London edition. 1 vol. royal 12mo., cloth. $1 00.

LA ROCHE ON YELLOW FEVER, considered in its Historical, Pathological, Etiological, and Therapeutical Relations. In two large and handsome octavo volumes of nearly 1500 pages, cloth. $7 00.

LAYCOCK'S LECTURES ON THE PRINCIPLES AND METHODS OF MEDICAL OBSERVATION AND RESEARCH. For the use of advanced students and junior practitioners. In one very neat royal 12mo. volume, cloth. $1 00.

BARLOW'S MANUAL OF THE PRACTICE OF MEDICINE. With Additions by D. F. CONDIE, M. D. 1 vol. 8vo., pp. 600, cloth. $2 50.

TODD'S CLINICAL LECTURES ON CERTAIN ACUTE DISEASES. In one neat octavo volume, of 320 pages, cloth. $2 50.

STURGES (OCTAVIUS), M.D. Cantab.,

Fellow of the Royal College of Physicians, &c. &c.

AN INTRODUCTION TO THE STUDY OF CLINICAL MEDICINE. Being a Guide to the Investigation of Disease, for the Use of Students. In one handsome 12mo. volume, cloth, $1 25. (*Just Issued.*)

DAVIS (NATHAN S.),

Prof. of Principles and Practice of Medicine, etc., in Chicago Med. College.

CLINICAL LECTURES ON VARIOUS IMPORTANT DISEASES; being a collection of the Clinical Lectures delivered in the Medical Wards of Mercy Hospital, Chicago. Edited by FRANK H. DAVIS, M.D. Second edition, enlarged. In one handsome royal 12mo. volume. Cloth, $1 75. (*Now Ready.*)

STOKES (WILLIAM), M.D., D.C.L., F.R.S.,

Regius Professor of Physic in the Univ. of Dublin, &c.

LECTURES ON FEVER, delivered in the Theatre of the Meath Hospital and County of Dublin Infirmary. Edited by JOHN WILLIAM MOORE, M.D., Assistant Physician to the Cork Street Fever Hospital. In one neat octavo volume. (*Preparing.*)

⁂ To appear in the "MEDICAL NEWS AND LIBRARY" for 1875.

FLINT (AUSTIN), M.D.,

Professor of the Principles and Practice of Medicine in Bellevue Med. College, N. Y.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE; designed for the use of Students and Practitioners of Medicine. Fourth edition, revised and enlarged. In one large and closely printed octavo volume of about 1100 pages; cloth, $6 00; or strongly bound in leather, with raised bands, $7 00. (*Just Issued.*)

By common consent of the English and American medical press, this work has been assigned to the highest position as a complete and compendious text-book on the most advanced condition of medical science. At the very moderate price at which it is offered it will be found one of the cheapest volumes now before the profession. A few notices of previous editions are subjoined.

Admirable and unequalled.—*Western Journal of Medicine*, Nov. 1869.

Dr. Flint's work, though claiming no higher title than that of a text-book, is really more. He is a man of large clinical experience, and his book is full of such masterly descriptions of disease as can only be drawn by a man intimately acquainted with their various forms. It is not so long since we had the pleasure of reviewing his first edition, and we recognize a great improvement, especially in the general part of the work. It is a work which we can cordially recommend to our readers as fully abreast of the science of the day.—*Edinburgh Med. Journal*, Oct. '69.

One of the best works of the kind for the practitioner, and the most convenient of all for the student. —*Am. Journ. Med. Sciences*, Jan. 1869.

This work, which stands pre-eminently as the advance standard of medical science up to the present time in the practice of medicine, has for its author one who is well and widely known as one of the leading practitioners of this continent. In fact, it is seldom that any work is ever issued from the press more deserving of universal recommendation.—*Dominion Med. Journal*, May, 1869.

The third edition of this most excellent book scarcely needs any commendation from us. The volume, as it stands now, is really a marvel: first of all, it is excellently printed and bound—and we encounter that luxury of America, the ready-cut pages, which the Yankees are 'cute enough to insist upon—nor are these by any means trifles; but the contents of the book are astonishing. Not only is it wonderful that any one man can have grasped in his mind the whole scope of medicine with that vigor which Dr. Flint shows, but the condensed yet clear way in which this is done is a perfect literary triumph. Dr. Flint is pre-eminently one of the strong men, whose right to do this kind of thing is well admitted; and we say no more than the truth when we affirm that he is very nearly the only living man that could do it with such results as the volume before us.—*The London Practitioner*, March, 1869.

This is in some respects the best text-book of medicine in our language, and it is highly appreciated on the other side of the Atlantic, inasmuch as the first edition was exhausted in a few months. The second edition was little more than a reprint, but the present has, as the author says, been thoroughly revised. Much valuable matter has been added, and by making the type smaller, the bulk of the volume is not much increased. The weak point in many American works is pathology, but Dr. Flint has taken peculiar pains on this point, greatly to the value of the book. —*London Med. Times and Gazette*, Feb. 6, 1869.

BY THE SAME AUTHOR.

ESSAYS ON CONSERVATIVE MEDICINE AND KINDRED TOPICS. In one very handsome royal 12mo. volume. Cloth, $1 38. (*Just Issued.*)

CONTENTS.

I. Conservative Medicine. II. Conservative Medicine as applied to Therapeutics. III. Conservative Medicine as applied to Hygiene. IV. Medicine in the Past, the Present, and the Future. V. Alimentation in Disease. VI. Tolerance of Disease. VII. On the Agency of the Mind in Etiology, Prophylaxis, and Therapeutics. VIII. Divine design as exemplified in the Natural History of Disease.

WATSON (THOMAS), M. D., &c.

LECTURES ON THE PRINCIPLES AND PRACTICE OF PHYSIC. Delivered at King's College, London. A new American, from the Fifth revised and enlarged English edition. Edited, with additions, and several hundred illustrations, by HENRY HARTSHORNE, M.D., Professor of Hygiene in the University of Pennsylvania. In two large and handsome 8vo. vols. Cloth, $9 00; leather, $11 00. (*Lately Published.*)

It is a subject for congratulation and for thankfulness that Sir Thomas Watson, during a period of comparative leisure, after a long, laborious, and most honorable professional career, while retaining full possession of his high mental faculties, should have employed the opportunity to submit his Lectures to a more thorough revision than was possible during the earlier and busier period of his life. Carefully passing in review some of the most intricate and important pathological and practical questions, the results of his clear insight and his calm judgment are now recorded for the benefit of mankind, in language which, for precision, vigor, and classical elegance, has rarely been equalled, and never surpassed The revision has evidently been most carefully done, and the results appear in almost every page.—*Brit. Med. Journ.*, Oct. 14, 1871.

The lectures are so well known and so justly appreciated, that it is scarcely necessary to do more than call attention to the special advantages of the last over previous editions. The author's rare combination of great scientific attainments combined with wonderful forensic eloquence has exerted extraordinary influence over the last two generations of physicians. His clinical descriptions of most diseases have never been equalled; and on this score at least his work will live long in the future. The work will be sought by all who appreciate a great book.—*Amer. Journ. of Syphilography*, July, 1872.

We are exceedingly gratified at the reception of this new edition of Watson, pre-eminently the prince of English authors, on "Practice." We, who read the first edition shall never forget the great pleasure and profit we derived from its graphic delineations of disease, its vigorous style and splendid English. Maturity of years, extensive observation, profound research, and yet continuous enthusiasm, have combined to give us in this latest edition a model of professional excellence in teaching with rare beauty in the mode of communication. But this *classic* needs no eulogium of ours.—*Chicago Med. Journ.*, July, 1872

DUNGLISON, FORBES, TWEEDIE, AND CONOLLY.

THE CYCLOPÆDIA OF PRACTICAL MEDICINE: comprising Treatises on the Nature and Treatment of Diseases, Materia Medica and Therapeutics, Diseases of Women and Children, Medical Jurisprudence, &c. &c. In four large super-royal octavo volumes, of 3254 double-columned pages, strongly and handsomely bound in leather, $15; cloth, $11.

HARTSHORNE (HENRY), M.D.,
Professor of Hygiene in the University of Pennsylvania.

ESSENTIALS OF THE PRINCIPLES AND PRACTICE OF MEDICINE. A handy-book for Students and Practitioners. Fourth edition, revised and improved. With about one hundred illustrations. In one handsome royal 12mo volume, of about 550 pages, cloth, $2 63; half bound, $2 88. (*Just Ready.*)

The thorough manner in which the author has labored to fully represent in this favorite handbook the most advanced condition of practical medicine is shown by the fact that the present edition contains more than 250 additions, representing the investigations of 172 authors not referred to in previous editions. Notwithstanding an enlargement of the page, the size has been increased by sixty pages. A number of illustrations have been introduced which it is hoped will facilitate the comprehension of details by the reader, and no effort has been spared to make the volume worthy a continuance of the very great favor with which it has hitherto been received.

The work is brought fully up with all the recent advances in medicine, is admirably condensed, and yet sufficiently explicit for all the purposes intended, thus making it by far the best work of its character ever published.—*Cincinnati Clinic*, Oct. 24, 1874.

We have already had occasion to notice the previous editions of this work. It is excellent of its kind. The author has given a very careful revision, in view of the rapid progress of medical science.—*N. Y. Med. Journ.*, Nov. 1874.

The present edition of Dr. Hartshorne's work is a very decided improvement upon the former ones in many particulars, and is fully up to the most advanced state of the science.—*Leavenworth Medical Herald*, Nov. 1874.

Without doubt the best book of the kind published in the English language.—*St. Louis Med. and Surg. Journ.*, Nov. 1874.

As a handbook, which clearly sets forth the ESSENTIALS of the PRINCIPLES AND PRACTICE OF MEDICINE, we do not know of its equal.—*Va. Med. Monthly.*

As a brief, condensed, but comprehensive handbook, it cannot be improved upon.—*Chicago Med. Examiner*, Nov. 15, 1874.

PAVY (F. W.), M. D., F. R. S.,
Senior Asst. Physician to and Lecturer on Physiology, at Guy's Hospital, &c.

A TREATISE ON THE FUNCTION OF DIGESTION; its Disorders and their Treatment. From the second London edition. In one handsome volume, small octavo, cloth, $2 00.

BY THE SAME AUTHOR. (*Just Ready.*

A TREATISE ON FOOD AND DIETETICS, PHYSIOLOGICALLY AND THERAPEUTICALLY CONSIDERED. In one handsome octavo volume of nearly 600 pages, cloth, $4 75.

SUMMARY OF CONTENTS.

Introductory Remarks on the Dynamic Relations of Food—On the Origination of Food—The Constituent Relations of Food—Alimentary Principles, their Classification, Chemical Relations, Digestion, Assimilation, and Physiological Uses—Nitrogenous Alimentary Principles—Non-Nitrogenous Alimentary Principles—The Carbo-Hydrates—The Inorganic Alimentary Principles—Alimentary Substances—Animal Alimentary Substances—Vegetable Alimentary Substances—Beverages—Condiments—The Preservation of Food—Principles of Dietetics—Practical Dietetics—Diet of Infants—Diet for Training—Therapeutic Dietetics—Dietetic Preparations for the Invalid—Hospital Dietaries.

CHAMBERS (T. K.), M. D. (*Lately Published.*)
Consulting Physician to St. Mary's Hospital, London, &c.

THE INDIGESTIONS; or, Diseases of the Digestive Organs Functionally Treated. Third and revised Edition. In one handsome 8vo. vol. of 383 pages, cloth, $3 00.

BY THE SAME AUTHOR. (*Lately Published.*)

RESTORATIVE MEDICINE. An Harveian Annual Oration. With Two Sequels. In one very handsome volume, small 12mo., cloth, $1 00.

BY THE SAME AUTHOR. (*Now Ready.*)

A MANUAL OF DIET AND REGIMEN IN HEALTH AND SICKNESS. In one handsome octavo volume. Cloth, $2 75.

The aims of this handbook are purely practical, and therefore it has not been thought right to increase its size by the addition of the chemical, botanical, and industrial learning which rapidly collects round the nucleus of every article interesting as an eatable. Space has been thus gained for a full discussion of many matters connecting food and drink with the daily current of social life, which the position of the author as a practising physician has led him to believe highly important to the present and future of our race.—*Preface.*

SUMMARY OF CONTENTS.

PART I. *General Dietetics.* CHAP. I. Theories of Dietetics. II. On the Choice of Food. III. On the Preparation of Food. IV. On Digestion and Nutrition.

PART II. *Special Dietetics of Health.* CHAP. I. Regimen of Infancy and Motherhood. II. Regimen of Childhood and Youth. III. Commercial Life. IV. Literary and Professional Life. V. Noxious Trades. VI. Athletic Training. VII. Hints for Healthy Travellers. VIII. Effects of Climate. IX. Starvation, Poverty, and Fasting. X. The Decline of Life. XI. Alcohol.

PART III. *Dietetics in Sickness.* CHAP. I. Dietetics and Regimen in Acute Fevers. II. The Diet and Regimen of certain other Inflammatory States. III. The Diet and Regimen of Weak Digestion. IV. Gout and Rheumatism. V. Gravel, Stone, Albuminuria, and Diabetes. VI. Deficient Evacuation. VII. Nerve Disorders. VIII. Scrofula, Rickets, and Consumption. IX. Diseases of Heart and Arteries.

FLINT (AUSTIN), M.D.,

Professor of the Principles and Practice of Medicine in Bellevue Hospital Med. College, N. Y

A PRACTICAL TREATISE ON THE DIAGNOSIS, PATHOLOGY, AND TREATMENT OF DISEASES OF THE HEART. Second revised and enlarged edition. In one octavo volume of 550 pages, with a plate, cloth, $4.

Dr. Flint chose a difficult subject for his researches, and has shown remarkable powers of observation and reflection, as well as great industry, in his treatment of it. His book must be considered the fullest and clearest practical treatise on those subjects, and should be in the hands of all practitioners and students. It is a credit to American medical literature. —*Amer. Journ. of the Med. Sciences*, July, 1860.

We question the fact of any recent American author in our profession being more extensively known, or more deservedly esteemed in this country than Dr. Flint. We willingly acknowledge his success, more particularly in the volume on diseases of the heart, in making an extended personal clinical study available for purposes of illustration, in connection with cases which have been reported by other trustworthy observers.—*Brit. and For. Med.-Chirurg. Review.*

In regard to the merits of the work, we have no hesitation in pronouncing it full, accurate, and judicious. Considering the present state of science, such a work was much needed. It should be in the hands of every practitioner.—*Chicago Med. Journ.*

With more than pleasure do we hail the advent of this work, for it fills a wide gap on the list of textbooks for our schools, and is, for the practitioner, the most valuable practical work of its kind.—*N. O. Med News.*

BY THE SAME AUTHOR.

A PRACTICAL TREATISE ON THE PHYSICAL EXPLORATION OF THE CHEST AND THE DIAGNOSIS OF DISEASES AFFECTING THE RESPIRATORY ORGANS. Second and revised edition. In one handsome octavo volume of 595 pages, cloth, $4 50.

Dr. Flint's treatise is one of the most trustworthy guides which we can consult. The style is clear and distinct, and is also concise, being free from that tendency to over-refinement and unnecessary minuteness which characterizes many works on the same subject.—*Dublin Medical Press*, Feb 6, 1867

The chapter on Phthisis is replete with interest: and his remarks on the diagnosis, especially in the early stages, are remarkable for their acumen and great practical value. Dr. Flint's style is clear and elegant, and the tone of freshness and originality which pervades his whole work lend an additional force to its thoroughly practical character, which cannot fail to obtain for it a place as a standard work on diseases of the respiratory system.—*London Lancet*, Jan. 19, 1867.

This is an admirable book. Excellent in detail and execution, nothing better could be desired by the practitioner. Dr. Flint enriches his subject with much solid and not a little original observation.—*Ranking's Abstract*, Jan. 1867.

FULLER (HENRY WILLIAM), M. D.,

Physician to St. George's Hospital, London.

ON DISEASES OF THE LUNGS AND AIR-PASSAGES. Their Pathology, Physical Diagnosis, Symptoms, and Treatment. From the second and revised English edition. In one handsome octavo volume of about 500 pages, cloth, $3 50.

WILLIAMS (C. J. B.), M.D.,

Senior Consulting Physician to the Hospital for Consumption, Brompton, and

WILLIAMS (CHARLES T.), M.D.,

Physician to the Hospital for Consumption.

PULMONARY CONSUMPTION; Its Nature, Varieties, and Treatment. With an Analysis of One Thousand Cases to exemplify its duration. In one neat octavo volume of about 350 pages, cloth, $2 50. (*Lately Published.*)

He can still speak from a more enormous experience, and a closer study of the morbid processes involved in tuberculosis, than most living men. He owed it to himself, and to the importance of the subject, to embody his views in a separate work, and we are glad that he has accomplished this duty. After all, the grand teaching which Dr Williams has for the profession is to be found in his therapeutical chapters, and in the history of individual cases extended, by dint of care, over ten, twenty, thirty, and even forty years.—*London Lancet*, Oct. 21, 1871.

LA ROCHE ON PNEUMONIA. 1 vol. 8vo., cloth, of 500 pages Price $3 00.

SMITH ON CONSUMPTION; ITS EARLY AND REMEDIABLE STAGES. 1 vol. 8vo., pp. 254. $2 25

WALSHE ON THE DISEASES OF THE HEART AND GREAT VESSELS. Third American edition. In 1 vol. 8vo., 420 pp., cloth. $3 00

FOX (WILSON), M.D.,

Holme Prof. of Clinical Med., University Coll., London.

THE DISEASES OF THE STOMACH: Being the Third Edition of the "Diagnosis and Treatment of the Varieties of Dyspepsia." Revised and Enlarged. With illustrations. In one handsome octavo volume, cloth, $2 00. (*Now Ready.*)

Dr. Fox has put forth a volume of uncommon excellence, which we feel very sure will take a high rank among works that treat of the stomach.—*Am. Practitioner*, March, 1873.

BRINTON (WILLIAM), M.D., F.R.S.

LECTURES ON THE DISEASES OF THE STOMACH; with an Introduction on its Anatomy and Physiology. From the second and enlarged London edition. With illustrations on wood In one handsome octavo volume of about 300 pages, cloth, $3 25.

***ROBERTS* (*WILLIAM*), *M. D.*,**
Lecturer on Medicine in the Manchester School of Medicine, &c.

A PRACTICAL TREATISE ON URINARY AND RENAL DISEASES, including Urinary Deposits. Illustrated by numerous cases and engravings. Second American, from the Second Revised and Enlarged London Edition. In one large and handsome octavo volume of 616 pages, with a colored plate; cloth, $4 50. (*Lately Published.*)

The author has subjected this work to a very thorough revision, and has sought to embody in it the results of the latest experience and investigations. Although every effort has been made to keep it within the limits of its former size, it has been enlarged by a hundred pages, many new wood-cuts have been introduced, and also a colored plate representing the appearance of the different varieties of urine, while the price has been retained at the former very moderate rate.

The plan, it will thus be seen, is very complete, and the manner in which it has been carried out is in the highest degree satisfactory. The characters of the different deposits are very well described, and the microscopic appearances they present are illustrated by numerous well executed engravings. It only remains to us to strongly recommend to our readers Dr. Roberts's work, as containing an admirable *résumé* of the present state of knowledge of urinary diseases, and as a safe and reliable guide to the clinical observer.—*Edin. Med. Jour.*

The most complete and practical treatise upon renal diseases we have examined. It is peculiarly adapted to the wants of the majority of American practitioners from its clearness and simple announcement of the facts in relation to diagnosis and treatment of urinary disorders, and contains in condensed form the investigations of Bence Jones, Bird, Beale, Hassall, Prout, and a host of other well-known writers upon this subject. The characters of urine, physiological and pathological, as indicated to the naked eye as well as by microscopical and chemical investigations, are concisely represented both by description and by well executed engravings.—*Cincinnati Journ. of Med.*

***BASHAM* (*W. R.*), *M. D.*,**
Senior Physician to the Westminster Hospital, &c.

RENAL DISEASES: a Clinical Guide to their Diagnosis and Treatment. With illustrations. In one neat royal 12mo. volume of 304 pages, cloth, $2 00.

The chapters on diagnosis and treatment are very good, and the student and young practitioner will find them full of valuable practical hints. The third part, on the urine, is excellent, and we cordially recommend its perusal. The author has arranged his matter in a somewhat novel, and, we think, useful form. Here everything can be easily found, and, what is more important, easily read, for all the dry details of larger books here acquire a new interest from the author's arrangement. This part of the book is full of good work.—*Brit. and For. Medico-Chirurgical Review*, July, 1870.

The easy descriptions and compact modes of statement render the book pleasing and convenient.—*Am. Journ. Med. Sciences*, July, 1870.

***JONES* (*C. HANDFIELD*), *M. D.*,**
Physician to St. Mary's Hospital, &c.

CLINICAL OBSERVATIONS ON FUNCTIONAL NERVOUS DISORDERS. Second American Edition. In one handsome octavo volume of 348 pages, cloth, $3 25.

***LINCOLN* (*D. F.*). *M.D.*,**
Physician to the Department of Nervous Diseases, Boston Dispensary.

ELECTRO THERAPEUTICS; A Concise Manual of Medical Electricity. In one very neat royal 12mo. volume, cloth, with illustrations, $1 50. (*Just Ready.*)

The work is convenient in size, its descriptions of methods and appliances are sufficiently complete for the general practitioner, and the chapters on Electro-physiology and diagnosis are well written and readable. For those who wish a handy-book of directions for the employment of galvanism in medicine, this will serve as a very good and reliable guide.—*New Remedies*, Oct. 1874.

It is a well written work, and calculated to meet the demands of the busy practitioner. It contains the latest researches in this important branch of medicine.—*Peninsular Journ. of Med.*, Oct. 1874.

Eminently practical in character. It will amply repay any one for a careful perusal.—*Leavenworth Med. Herald*, Oct. 1874.

This little book is, considering its size, one of the very best of the English treatises on its subject that has come to our notice, possessing, among others, the rare merit of dealing avowedly and actually with principles, mainly, rather than with practical details, thereby supplying a real want, instead of helping merely to flood the literary market. Dr. Lincoln's style is usually remarkably clear, and the whole book is readable and interesting.—*Boston Med. and Surg. Journ.*, July 23, 1874.

We have here in a small compass a great deal of valuable information upon the subject of Medical Electricity.—*Canada Med. and Surg. Journ.*, Nov. 1874.

SLADE* (*D. D.*), *M.D.

DIPHTHERIA; its Nature and Treatment, with an account of the History of its Prevalence in various Countries. Second and revised edition. In one neat royal 12mo. volume, cloth, $1 25.

***HUDSON* (*A.*), *M. D.*, *M. R. I. A.*,**
Physician to the Meath Hospital.

LECTURES ON THE STUDY OF FEVER. In one vol. 8vo., cloth, $ 50.

LYONS* (*ROBERT D.*), *K. C. C.

A TREATISE ON FEVER. In one octavo volume of 362 pages; cloth, $2 25.

BUMSTEAD (FREEMAN J.), M.D.,

Professor of Venereal Diseases at the Col. of Phys. and Surg., New York, &c.

THE PATHOLOGY AND TREATMENT OF VENEREAL DISEASES.

Including the results of recent investigations upon the subject. Third edition, revised and enlarged, with illustrations. In one large and handsome octavo volume of over 700 pages, cloth, $5 00: leather, $6 00.

In preparing this standard work again for the press, the author has subjected it to a very thorough revision. Many portions have been rewritten, and much new matter added, in order to bring it completely on a level with the most advanced condition of syphilography, but by careful compression of the text of previous editions, the work has been increased by only sixty-four pages. The labor thus bestowed upon it, it is hoped, will insure for it a continuance of its position as a complete and trustworthy guide for the practitioner.

It is the most complete book with which we are acquainted in the language. The latest views of the best authorities are put forward, and the information is well arranged—a great point for the student, and still more for the practitioner. The subjects of visceral syphilis, syphilitic affections of the eyes, and the treatment of syphilis by repeated inoculations, are very fully discussed.—*London Lancet*, Jan 7, 1871.

Dr. Bumstead's work is already so universally known as the best treatise in the English language on venereal diseases, that it may seem almost superfluous to say more of it than that a new edition has been issued. But the author's industry has rendered this new edition virtually a new work, and so merits as much special commendation as if its predecessors had not been published. As a thoroughly practical book on a class of diseases which form a large share of nearly every physician's practice, the volume before us is by far the best of which we have knowledge.—*N. Y. Medical Gazette*, Jan. 28, 1871.

It is rare in the history of medicine to find any one book which contains all that a practitioner needs to know; while the possessor of "Bumstead on Venereal" has no occasion to look outside of its covers for anything practical connected with the diagnosis, history, or treatment of these affections.—*N. Y. Medical Journal*, March, 1871.

CULLERIER (A.), and *BUMSTEAD (FREEMAN J.).*

Surgeon to the Hôpital du Midi.

Professor of Venereal Diseases in the College of Physicians and Surgeons, N. Y.

AN ATLAS OF VENEREAL DISEASES. Translated and Edited by

FREEMAN J. BUMSTEAD. In one large imperial 4to. volume of 328 pages, double-columns, with 26 plates, containing about 150 figures, beautifully colored, many of them the size of life; strongly bound in cloth, $17 00; also, in five parts, stout wrappers for mailing, at $3 per part.

Anticipating a very large sale for this work, it is offered at the very low price of THREE DOLLARS a Part, thus placing it within the reach of all who are interested in this department of practice. Gentlemen desiring early impressions of the plates would do well to order it without delay.

A specimen of the plates and text sent free by mail, on receipt of 25 cents.

We wish for once that our province was not restricted to methods of treatment, that we might say something of the exquisite colored plates in this volume. —*London Practitioner*, May, 1869.

As a whole, it teaches all that can be taught by means of plates and print.—*London Lancet*, March 13, 1869.

Superior to anything of the kind ever before issued on this continent.—*Canada Med. Journal*, March, '69.

The practitioner who desires to understand this branch of medicine thoroughly should obtain this, the most complete and best work ever published.—*Dominion Med. Journal*, May, 1869.

This is a work of master hands on both sides. M Cullerier is scarcely second to, we think we may truly say is a peer of the illustrious and venerable Ricord, while in this country we do not hesitate to say that Dr. Bumstead, as an authority, is without a rival Assuring our readers that these illustrations tell the whole history of venereal disease, from its inception to its end, we do not know a single medical work, which for its kind is more *necessary* for them to have. —*California Med. Gazette*, March, 1869.

The most splendidly illustrated work in the language, and in our opinion far more useful than the French original.—*Am. Journ. Med. Sciences*, Jan. '69.

The fifth and concluding number of this magnificent work has reached us, and we have no hesitation in saying that its illustrations surpass those of previous numbers.—*Boston Med. and Surg. Journal*, Jan. 14, 1869.

Other writers besides M. Cullerier have given us a good account of the diseases of which he treats, but no one has furnished us with such a complete series of illustrations of the venereal diseases. There is however, an additional interest and value possessed by the volume before us; for it is an American reprint and translation of M. Cullerier's work, with incidental remarks by one of the most eminent American syphilographers, Mr. Bumstead.—*Brit. and For. Medico-Chir. Review*, July, 1869.

HILL (BERKELEY),

Surgeon to the Lock Hospital, London.

ON SYPHILIS AND LOCAL CONTAGIOUS DISORDERS.

In one handsome octavo volume; cloth, $3 25.

Bringing, as it does, the entire literature of the disease down to the present day, and giving with great ability the results of modern research, it is in every respect a most desirable work, and one which should find a place in the library of every surgeon.—*California Med. Gazette*, June, 1869.

Considering the scope of the book and the careful attention to the manifold aspects and details of its subject, it is wonderfully concise All these qualities render it an especially valuable book to the beginner, to whom we would most earnestly recommend its study; while it is no less useful to the practitioner.—*St. Louis Med. and Surg. Journal*, May, 1869.

The most convenient and ready book of reference we have met with.—*N. Y. Med. Record*, May 1, 1869

Most admirably arranged for both student and practitioner, no other work on the subject equals it; it is more simple, more easily studied.—*Buffalo Med. and Surg. Journal*, March, 1869.

ZEISSL (H.), M.D.

A COMPLETE TREATISE ON VENEREAL DISEASES.

Translated from the Second Enlarged German Edition, by FREDERIC R. STURGIS, M.D In one octavo volume, with illustrations. (*Preparing.*)

WILSON (ERASMUS), F.R.S.

ON DISEASES OF THE SKIN. With Illustrations on wood. Seventh American, from the sixth and enlarged English edition. In one large octavo volume of over 800 pages, $5.

A SERIES OF PLATES ILLUSTRATING "WILSON ON DISEASES OF THE SKIN;" consisting of twenty beautifully executed plates, of which thirteen are exquisitely colored, presenting the Normal Anatomy and Pathology of the Skin, and embracing accurate representations of about one hundred varieties of disease, most of them the size of nature. Price, in extra cloth, $5 50.

Also, the Text and Plates, bound in one handsome volume. Cloth, $10.

No one treating skin diseases should be without a copy of this standard work.—*Canada Lancet.*

We can safely recommend it to the profession as the best work on the subject now in existence in the English language.—*Medical Times and Gazette*

Mr. Wilson's volume is an excellent digest of the actual amount of knowledge of cutaneous diseases It includes almost every fact or opinion of importance connected with the anatomy and pathology of the skin.—*British and Foreign Medical Review.*

Such a work as the one before us is a most capital and acceptable help. Mr. Wilson has long been held as high authority in this department of medicine, and his book on diseases of the skin has long been regarded as one of the best text-books extant on the subject. The present edition is carefully prepared, and brought up in its revision to the present time In this edition we have also included the beautiful series of plates illustrative of the text, and in the last edition published separately. There are twenty of these plates, nearly all of them colored to nature, and exhibiting with great fidelity the various groups of diseases.—*Cincinnati Lancet.*

BY THE SAME AUTHOR.

THE STUDENT'S BOOK OF CUTANEOUS MEDICINE and DISEASES OF THE SKIN. In one very handsome royal 12mo. volume. $3 50.

NELIGAN (J. MOORE), M.D., M.R.I.A.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. Fifth American, from the second and enlarged Dublin edition by T. W. Belcher, M.D. In one neat royal 12mo. volume of 462 pages, cloth, $2 25.

Fully equal to all the requirements of students and young practitioners.—*Dublin Med. Press.*

Of the remainder of the work we have nothing beyond unqualified commendation to offer. It is so far the most complete one of its size that has appeared, and for the student there can be none which can compare with it in practical value All the late discoveries in Dermatology have been duly noticed, and their value justly estimated; in a word, the work is fully up to the times, and is thoroughly stocked with most valuable information.—*New York Med. Record,* Jan. 15, 1867.

The most convenient manual of diseases of the skin that can be procured by the student.—*Chicago Med. Journal*, Dec. 1866.

BY THE SAME AUTHOR.

ATLAS OF CUTANEOUS DISEASES. In one beautiful quarto volume, with exquisitely colored plates, &c., presenting about one hundred varieties of disease. Cloth, $5 50.

The diagnosis of eruptive disease, however, under all circumstances, is very difficult. Nevertheless, Dr. Neligan has certainly, "as far as possible," given a faithful and accurate representation of this class of diseases, and there can be no doubt that these plates will be of great use to the student and practitioner in drawing a diagnosis as to the class, order, and species to which the particular case may belong While looking over the "Atlas" we have been induced to examine also the "Practical Treatise," and we are inclined to consider it a very superior work, combining accurate verbal description with sound views of the pathology and treatment of eruptive diseases. —*Glasgow Med. Journal*

A compend which will very much aid the practitioner in this difficult branch of diagnosis. Taken with the beautiful plates of the Atlas, which are remarkable for their accuracy and beauty of coloring, it constitutes a very valuable addition to the library of a practical man.—*Buffalo Med. Journal.*

HILLIER (THOMAS), M.D.,

Physician to the Skin Department of University College Hospital, &c.

HAND-BOOK OF SKIN DISEASES, for Students and Practitioners. Second American Edition. In one royal 12mo. volume of 358 pp. With Illustrations. Cloth, $2 25.

We can conscientiously recommend it to the student; the style is clear and pleasant to read, the matter is good, and the descriptions of disease, with the modes of treatment recommended, are frequently illustrated with well-recorded cases.—*London Med. Times and Gazette*, April 1, 1865.

It is a concise, plain, practical treatise on the various diseases of the skin; just such a work, indeed, as was much needed, both by medical students and practitioners.—*Chicago Medical Examiner*, May, 1865.

ANDERSON (McCALL), M.D.,

Physician to the Dispensary for Skin Diseases, Glasgow, &c.

ON THE TREATMENT OF DISEASES OF THE SKIN. With an Analysis of Eleven Thousand Consecutive Cases. In one vol. 8vo. $1. (*Lately Published.*)

GUERSANT'S SURGICAL DISEASES OF INFANTS AND CHILDREN. Translated by R. J. DUNGLISON, M.D. 1 vol. 8vo. Cloth, $2 50.

DEWEES ON THE PHYSICAL AND MEDICAL TREATMENT OF CHILDREN Eleventh edition. 1 vol. 8vo. of 548 pages. Cloth, $2 80.

SMITH (J. LEWIS), M. D.,
Professor of Morbid Anatomy in the Bellevue Hospital Med. College, N Y.

A COMPLETE PRACTICAL TREATISE ON THE DISEASES OF CHILDREN.

Second Edition, revised and greatly enlarged. In one handsome octavo volume of 742 pages, cloth, $5; leather, $6. (*Lately Published.*)

FROM THE PREFACE TO THE SECOND EDITION.

In presenting to the profession the second edition of his work, the author gratefully acknowledges the favorable reception accorded to the first. He has endeavored to merit a continuance of this approbation by rendering the volume much more complete than before. Nearly twenty additional diseases have been treated of, among which may be named Diseases Incidental to Birth, Rachitis, Tuberculosis, Scrofula, Intermittent, Remittent, and Typhoid Fevers, Chorea, and the various forms of Paralysis. Many new formulæ, which experience has shown to be useful, have been introduced, portions of the text of a less practical nature have been condensed, and other portions, especially those relating to pathological histology, have been rewritten to correspond with recent discoveries. Every effort has been made, however, to avoid an undue enlargement of the volume, but, notwithstanding this, and an increase in the size of the page, the number of pages has been enlarged by more than one hundred.

227 WEST 49TH STREET, NEW YORK, April, 1872.

The work will be found to contain nearly one-third more matter than the previous edition, and it is confidently presented as in every respect worthy to be received as the standard American text-book on the subject.

Eminently practical as well as judicious in its teachings.—*Cincinnati Lancet and Obs.*, July, 1872.

A standard work that leaves little to be desired.—*Indiana Journal of Medicine*, July, 1872.

We know of no book on this subject that we can more cordially recommend to the medical student and the practitioner.—*Cincinnati Clinic*, June 29, '72.

We regard it as superior to any other single work on the diseases of infancy and childhood.—*Detroit Rev. of Med. and Pharmacy*, Aug. 1872.

We confess to increased enthusiasm in recommending this second edition.—*St. Louis Med. and Surg. Journal*, Aug. 1872.

CONDIE (D. FRANCIS), M. D.

A PRACTICAL TREATISE ON THE DISEASES OF CHILDREN.

Sixth edition, revised and augmented. In one large octavo volume of nearly 800 closely-printed pages, cloth, $5 25; leather, $6 25.

The present edition, which is the sixth, is fully up to the times in the discussion of all those points in the pathology and treatment of infantile diseases which have been brought forward by the German and French teachers. As a whole, however, the work is the best American one that we have, and in its special adaptation to American practitioners it certainly has no equal.—*New York Med. Record*, March 2, 1868.

WEST (CHARLES), M. D.,
Physician to the Hospital for Sick Children, &c.

LECTURES ON THE DISEASES OF INFANCY AND CHILDHOOD.

Fifth American from the sixth revised and enlarged English edition. In one large and handsome octavo volume of 678 pages. Cloth, $4 50; leather, $5 50. (*Just Issued.*)

The continued demand for this work on both sides of the Atlantic, and its translation into German, French, Italian, Danish, Dutch, and Russian, show that it fills satisfactorily a want extensively felt by the profession. There is probably no man living who can speak with the authority derived from a more extended experience than Dr. West, and his work now presents the results of nearly 2000 recorded cases, and 600 post-mortem examinations selected from among nearly 40,000 cases which have passed under his care. In the preparation of the present edition he has omitted much that appeared of minor importance, in order to find room for the introduction of additional matter, and the volume, while thoroughly revised, is therefore not increased materially in size.

Of all the English writers on the diseases of children, there is no one so entirely satisfactory to us as Dr. West. For years we have held his opinion as judicial, and have regarded him as one of the highest living authorities in the difficult department of medical science in which he is most widely known.—*Boston Med. and Surg. Journal.*

BY THE SAME AUTHOR. (*Lately Issued.*)

ON SOME DISORDERS OF THE NERVOUS SYSTEM IN CHILDHOOD;

being the Lumleian Lectures delivered at the Royal College of Physicians of London, in March, 1871. In one volume, small 12mo., cloth, $1 00.

SMITH (EUSTACE), M. D.,
Physician to the Northwest London Free Dispensary for Sick Children.

A PRACTICAL TREATISE ON THE WASTING DISEASES OF INFANCY AND CHILDHOOD.

Second American, from the second revised and enlarged English edition. In one handsome octavo volume, cloth, $2 50. (*Lately Issued.*)

This is in every way an admirable book. The modest title which the author has chosen for it scarcely conveys an adequate idea of the many subjects upon which it treats. Wasting is so constant an attendant upon the maladies of childhood, that a treatise upon the wasting diseases of children must necessarily embrace the consideration of many affections of which it is a symptom; and this is excellently well done by Dr. Smith. The book might fairly be described as a practical handbook of the common diseases of children, so numerous are the affections considered either collaterally or directly. We are acquainted with no safer guide to the treatment of children's diseases, and few works give the insight into the physiological and other peculiarities of children that Dr. Smith's book does.—*Brit. Med. Journ.*, April 8, 1871.

THE OBSTETRICAL JOURNAL. (*Free of postage for* 1875.)

THE OBSTETRICAL JOURNAL of Great Britain and Ireland; Including MIDWIFERY, and the DISEASES OF WOMEN AND INFANTS. With an American Supplement, edited by WILLIAM F. JENKS, M.D. A monthly of about 80 octavo pages, very handsomely printed. Subscription, Five Dollars per annum. Single Numbers, 50 cents each.

Commencing with April, 1873, the Obstetrical Journal consists of Original Papers by British and Foreign Contributors; Transactions of the Obstetrical Societies in England and abroad; Reports of Hospital Practice; Reviews and Bibliographical Notices; Articles and Notes, Editorial, Historical, Forensic, and Miscellaneous; Selections from Journals; Correspondence, &c. Collecting together the vast amount of material daily accumulating in this important and rapidly improving department of medical science, the value of the information which it presents to the subscriber may be estimated from the character of the gentlemen who have already promised their support, including such names as those of Drs. ATTHILL, ROBERT BARNES, HENRY BENNET, THOMAS CHAMBERS, FLEETWOOD CHURCHILL, MATTHEWS DUNCAN, GRAILY HEWITT, BRAXTON HICKS, ALFRED MEADOWS, W. LEISHMAN, ALEX. SIMPSON, TYLER SMITH, EDWARD J. TILT, SPENCER WELLS, &c. &c.; in short, the representative men of British Obstetrics and Gynæcology.

In order to render the OBSTETRICAL JOURNAL fully adequate to the wants of the American profession, each number contains a Supplement devoted to the advances made in Obstetrics and Gynæcology on this side of the Atlantic. This portion of the Journal is under the editorial charge of Dr. WILLIAM F. JENKS, to whom editorial communications, exchanges, books for review, &c., may be addressed, to the care of the publisher.

⁂ Complete sets from the beginning can no longer be furnished, but subscriptions can commence with January, 1875, or with Vol. II., April, 1874.

THOMAS (T. GAILLARD), M.D.,

Professor of Obstetrics, &c., in the College of Physicians and Surgeons, N. Y., &c.

A PRACTICAL TREATISE ON THE DISEASES OF WOMEN. Fourth edition, enlarged and thoroughly revised. In one large and handsome octavo volume of 800 pages, with 191 illustrations. Cloth, $5 00; leather, $6 00. (*Now Ready.*)

The author has taken advantage of the opportunity afforded by the call for another edition of this work to render it worthy a continuance of the very remarkable favor with which it has been received. Every portion has been subjected to a conscientious revision, and no labor has been spared to make it a complete treatise on the most advanced condition of its important subject.

A few notices of the previous editions are subjoined:—

Professor Thomas fairly took the Profession of the United States by storm when his book first made its appearance early in 1868. Its reception was simply enthusiastic, notwithstanding a few adverse criticisms from our transatlantic brethren, the first large edition was rapidly exhausted, and in six months a second one was issued, and in two years a third one was announced and published, and we are now promised the fourth. The popularity of this work was not ephemeral, and its success was unprecedented in the annals of American medical literature. Six years is a long period in medical scientific research, but Thomas's work on "Diseases of Women" is still the leading native production of the United States. The order, the matter, the absence of theoretical disputativeness, the fairness of statement, and the elegance of diction, preserved throughout the entire range of the book, indicate that Professor Thomas did not overestimate his powers when he conceived the idea and executed the work of producing a new treatise upon diseases of women.—PROF. PALLEN, in *Louisville Med. Journal*, Sept. 1874.

Briefly, we may say that we know of no book which so completely and concisely represents the present state of gynæcology; none so full of well-digested and reliable teaching; none which bespeaks an author more apt in research and abundant in resources.—*N. Y. Med. Record*, May 1, 1872.

We should not be doing our duty to the profession did we not tell those who are unacquainted with the book, how much it is valued by gynæcologists, and how it is in many respects one of the best text-books on the subject we possess in our language. We have no hesitation in recommending Dr. Thomas's work as one of the most complete of its kind ever published. It should be in the possession of every practitioner for reference and for study.—*London Lancet*, April 27, 1872.

We are free to say that we regard Dr. Thomas the best American authority on diseases of women.—*Cincinnati Lancet and Observer*, May, 1872.

No general practitioner can afford to be without it.—*St. Louis Med. and Surg. Journal*, May, 1872.

Its able author need not fear comparison between it and any similar work in the English language; nay more, as a text-book for students and as a guide for practitioners, we believe it is unequalled. If either student or practitioner can get but one book on diseases of women that book should be "Thomas."—*Amer. Jour. Med. Sciences*, April, 1872.

To students we unhesitatingly recommend it as the best text-book on diseases of females extant.—*St. Louis Med. Reporter*, June, 1869.

Of all the army of books that have appeared of late years, on the diseases of the uterus and its appendages, we know of none that is so clear, comprehensive, and practical as this of Dr. Thomas', or one that we should more emphatically recommend to the young practitioner, as his guide.—*California Med. Gazette*, June, 1869.

It would be superfluous to give an extended review of what is now firmly established as *the* American text-book of Gynæcology.—*N. Y. Med. Gazette*, July 17, 1869.

This is a new and revised edition of a work which we recently noticed at some length, and earnestly commended to the favorable attention of our readers. The fact that, in the short space of one year, this second edition makes its appearance, shows that the general judgment of the profession has largely confirmed the opinion we gave at that time.—*Cincinnati Lancet*, Aug. 1869.

It is so short a time since we gave a full review of the first edition of this book, that we deem it only necessary now to call attention to the second appearance of the work. Its success has been remarkable, and we can only congratulate the author on the brilliant reception his book has received.—*N. Y. Med. Journal*, April, 1869.

HODGE (HUGH L.), M.D.,

Emeritus Professor of Obstetrics, &c., in the University of Pennsylvania.

ON DISEASES PECULIAR TO WOMEN; including Displacements of the Uterus.

With original illustrations. Second edition, revised and enlarged. In one beautifully printed octavo volume of 531 pages, cloth, $4 50.

From PROF. W. H. BYFORD, *of the Rush Medical College, Chicago.*

The book bears the impress of a master hand, and must, as its predecessor, prove acceptable to the profession. In diseases of women Dr. Hodge has established a school of treatment that has become world-wide in fame.

Professor Hodge's work is truly an original one from beginning to end, consequently no one can peruse its pages without learning something new. The book, which is by no means a large one, is divided into two grand sections, so to speak: first, that treating of the nervous sympathies of the uterus, and, secondly, that which speaks of the mechanical treatment of displacements of that organ. He is disposed, as a nonbeliever in the frequency of inflammations of the uterus, to take strong ground against many of the highest authorities in this branch of medicine, and the arguments which he offers in support of his position are, to say the least, well put. Numerous woodcuts adorn this portion of the work, and add incalculably to the proper appreciation of the variously shaped instruments referred to by our author. As a contribution to the study of women's diseases, it is of great value, and is abundantly able to stand on its own merits.—*N. Y. Medical Record*, Sept. 15, 1868.

WEST (CHARLES), M.D.

LECTURES ON THE DISEASES OF WOMEN.

Third American, from the Third London edition. In one neat octavo volume of about 550 pages, cloth, $3 75; leather, $4 75.

As a writer, Dr. West stands, in our opinion, second only to Watson, the "Macaulay of Medicine;" he possesses that happy faculty of clothing instruction in easy garments; combining pleasure with profit, he leads his pupils, in spite of the ancient proverb, along a royal road to learning. His work is one which will not satisfy the extreme on either side, but it is one that will please the great majority who are seeking truth, and one that will convince the student that he has committed himself to a candid, safe, and valuable guide.—*N. A. Med.-Chirurg Review.*

We have to say of it, briefly and decidedly, that it is the best work on the subject in any language, and that it stamps Dr. West as the *facile princeps* of British obstetric authors.—*Edinburgh Med. Journal.*

BARNES (ROBERT), M. D., F. R. C. P.,

Obstetric Physician to St. Thomas's Hospital, &c.

A CLINICAL EXPOSITION OF THE MEDICAL AND SURGICAL DISEASES OF WOMEN.

In one handsome octavo volume of about 800 pages, with 169 illustrations. Cloth, $5 00; leather, $6 00. (*Just Issued.*)

The very complete scope of this volume and the manner in which it has been filled out, may be seen by the subjoined Summary of Contents.

INTRODUCTION. CHAPTER I. Ovaries; Corpus Luteum. II. Fallopian Tubes. III. Shape of Uterine Cavity. IV. Structure of Uterus. V. The Vagina. VI. Examinations and Diagnosis. VII. Significance of Leucorrhœa. VIII. Discharges of Air. IX. Watery Discharges. X. Purulent Discharges. XI. Hemorrhagic Discharges. XII. Significance of Pain. XIII. Significance of Dyspareunia. XIV. Significance of Sterility. XV. Instrumental Diagnosis and Treatment. XVI. Diagnosis by the Touch, the Sound, the Speculum. XVII. Menstruation and its Disorders. XVIII. Amenorrhœa. XIX. Amenorrhœa (continued). XX. Dysmenorrhœa. XXI. Ovarian Dysmenorrhœa, &c. XXII. Inflammatory Dysmenorrhœa. XXIII. Irregularities of Change of Life. XXIV. Relations between Menstruation and Diseases. XXV. Disorders of Old Age. XXVI. Ovary, Absence and Hernia of. XXVII. Ovary, Hemorrhage, &c., of. XXVIII. Ovary, Tubercle, Cancer, &c., of. XXIX. Ovarian Cystic Tumors. XXX. Dermoid Cysts of Ovary. XXXI. Ovarian Tumors, Prognosis of. XXXII. Diagnosis of Ovarian Tumors. XXXIII. Ovarian Cysts, Treatment of. XXXIV. Fallopian Tubes, Diseases of. XXXV. Broad Ligaments, Diseases of. XXXVI. Extra-uterine Gestation. XXXVII. Special Pathology of Uterus. XXXVIII. General Uterine Pathology. XXXIX. Alterations of Blood Supply. XL. Metritis, Endometritis, &c. XLI. Pelvic Cellulitis and Peritonitis, &c. XLII. Hæmatocele, &c. XLIII. Displacements of Uterus. XLIV. Displacements (continued). XLV. Retroversion and Retroflexion. XLVI. Inversion. XLVII. Uterine Tumors. XLVIII. Polypus Uteri. XLIX. Polypus Uteri (continued). L. Cancer. LI. Diseases of Vagina. LII. Diseases of the Vulva.

Embodying the long experience and personal observation of one of the greatest of living teachers in diseases of women, it seems pervaded by the presence of the author, who speaks directly to the reader, and speaks, too, as one having authority. And yet, notwithstanding this distinct personality, there is nothing narrow as to time, place, or individuals, in the views presented, and in the instructions given; Dr. Barnes has been an attentive student, not only of European, but also of American literature, pertaining to diseases of females, and enriched his own experience by treasures thence gathered; he seems as familiar, for example, with the writings of Sims, Emmet, Thomas, and Peaslee as if these eminent men were his countrymen and colleagues, and gives them a credit which must be gratifying to every American physician.—*Am. Journ. Med. Sci.*, April, 1874.

Throughout the whole book it is impossible not to feel that the author has spontaneously, conscientiously, and fearlessly performed his task. He goes direct to the point, and does not loiter on the way to gossip or quarrel with other authors. Dr. Barnes's book will be eagerly read all over the world, and will everywhere be admired for its comprehensiveness, honesty of purpose, and ability.—*The Obstet. Journ. of Great Britain and Ireland*, March, 1874.

CHURCHILL ON THE PUERPERAL FEVER AND OTHER DISEASES PECULIAR TO WOMEN. 1 vol. 8vo., pp. 450, cloth. $2 50.

MEIGS ON WOMAN: HER DISEASES AND THEIR REMEDIES. A Series of Lectures to his Class. Fourth and Improved Edition. 1 vol. 8vo., over 700 pages, cloth, $5 00; leather, $6 00.

MEIGS ON THE NATURE, SIGNS, AND TREATMENT OF CHILDBED FEVER. 1 vol. 8vo., pp 365, cloth. $2 00.

ASHWELL'S PRACTICAL TREATISE ON THE DISEASES PECULIAR TO WOMEN. Third American, from the Third and revised London edition. 1 vol. 8vo., pp 528, cloth. $3 50.

DEWEES'S TREATISE ON THE DISEASES OF FEMALES. With illustrations. Eleventh Edition, with the Author's last improvements and corrections. In one octavo volume of 536 pages, with plates, cloth. $3 00.

HODGE (HUGH L.), M.D.,

Emeritus Professor of Midwifery, &c., in the University of Pennsylvania, &c.

THE PRINCIPLES AND PRACTICE OF OBSTETRICS.

Illustrated with large lithographic plates containing one hundred and fifty-nine figures from original photographs, and with numerous wood-cuts. In one large and beautifully printed quarto volume of 550 double-columned pages, strongly bound in cloth, $14.

The work of Dr. Hodge is something more than a simple presentation of his particular views in the department of Obstetrics; it is something more than an ordinary treatise on midwifery; it is, in fact, a cyclopædia of midwifery. He has aimed to embody in a single volume the whole science and art of Obstetrics. An elaborate text is combined with accurate and varied pictorial illustrations, so that no fact or principle is left unstated or unexplained.—*Am. Med. Times*, Sept. 3, 1864.

We should like to analyze the remainder of this excellent work, but already has this review extended beyond our limited space. We cannot conclude this notice without referring to the excellent finish of the work. In typography it is not to be excelled; the paper is superior to what is usually afforded by our American cousins, quite equal to the best of English books. The engravings and lithographs are most beautifully executed. The work recommends itself for its originality, and is in every way a most valuable addition to those on the subject of obstetrics.—*Canada Med. Journal*, Oct. 1864.

It is very large, profusely and elegantly illustrated, and is fitted to take its place near the works of great obstetricians. Of the American works on the subject it is decidedly the best.—*Edinb. Med. Jour.*, Dec. '64.

We have examined Professor Hodge's work with great satisfaction; every topic is elaborated most fully. The views of the author are comprehensive, and concisely stated. The rules of practice are judicious, and will enable the practitioner to meet every emergency of obstetric complication with confidence.—*Chicago Med. Journal*, Aug. 1864.

More time than we have had at our disposal since we received the great work of Dr. Hodge is necessary to do it justice. It is undoubtedly by far the most original, complete, and carefully composed treatise on the principles and practice of Obstetrics which has ever been issued from the American press.—*Pacific Med. and Surg. Journal*, July, 1864.

We have read Dr. Hodge's book with great pleasure, and have much satisfaction in expressing our commendation of it as a whole. It is certainly highly instructive, and in the main, we believe, correct. The great attention which the author has devoted to the mechanism of parturition, taken along with the conclusions at which he has arrived, point, we think, conclusively to the fact that, in Britain at least, the doctrines of Naegele have been too blindly received.—*Glasgow Med. Journal*, Oct. 1864.

⁂ Specimens of the plates and letter-press will be forwarded to any address, free by mail, on receipt of six cents in postage stamps.

TANNER (THOMAS H.), M. D.

ON THE SIGNS AND DISEASES OF PREGNANCY.

First American from the Second and Enlarged English Edition. With four colored plates and illustrations on wood. In one handsome octavo volume of about 500 pages, cloth, $4 25.

The very thorough revision the work has undergone has added greatly to its practical value, and increased materially its efficiency as a guide to the student and to the young practitioner.—*Am. Journ. Med. Sci.*, April, 1868.

With the immense variety of subjects treated of and the ground which they are made to cover, the impossibility of giving an extended review of this truly remarkable work must be apparent. We have not a single fault to find with it, and most heartily commend it to the careful study of every physician who would not only always be sure of his diagnosis of pregnancy, but always ready to treat all the numerous ailments that are, unfortunately for the civilized women of to-day, so commonly associated with the function.—*N. Y. Med. Record*, March 16, 1868.

We recommend obstetrical students, young and old, to have this volume in their collections. It contains not only a fair statement of the signs, symptoms, and diseases of pregnancy, but comprises in addition much interesting relative matter that is not to be found in any other work that we can name.—*Edinburgh Med Journal*, Jan. 1868.

SWAYNE (JOSEPH GRIFFITHS), M. D.,

Physician-Accoucheur to the British General Hospital, &c.

OBSTETRIC APHORISMS FOR THE USE OF STUDENTS COMMENCING MIDWIFERY PRACTICE.

Second American, from the Fifth and Revised London Edition, with Additions by E. R. Hutchins, M. D. With Illustrations. In one neat 12mo. volume. Cloth, $1 25. (*Lately Issued.*)

⁂ See p. 3 of this Catalogue for the terms on which this work is offered as a premium to subscribers to the "American Journal of the Medical Sciences."

It is really a capital little compendium of the subject, and we recommend young practitioners to buy it and carry it with them when called to attend cases of labor. They can while away the otherwise tedious hours of waiting, and thoroughly fix in their memories the most important practical suggestions it contains. The American editor has materially added by his notes and the concluding chapters to the completeness and general value of the book.—*Chicago Med. Journal*, Feb. 1870.

The manual before us contains in exceedingly small compass—small enough to carry in the pocket—about all there is of obstetrics, condensed into a nutshell of Aphorisms. The illustrations are well selected, and serve as excellent reminders of the conduct of labor—regular and difficult.—*Cincinnati Lancet*, April, '70.

This is a most admirable little work, and completely answers the purpose. It is not only valuable for young beginners, but no one who is not a proficient in the art of obstetrics should be without it, because it condenses all that is necessary to know for ordinary midwifery practice. We commend the book most favorably.—*St. Louis Med. and Surg. Journal*, Sept. 10, 1870.

A studied perusal of this little book has satisfied us of its eminently practical value. The object of the work, the author says, in his preface, is to give the student a few brief and practical directions respecting the management of ordinary cases of labor; and also to point out to him in extraordinary cases when and how he may act upon his own responsibility, and when he ought to send for assistance.—*N. Y. Medical Journal*, May, 1870

WINCKEL (F.).

Professor and Director of the Gynæcological Clinic in the University of Rostock.

A COMPLETE TREATISE ON THE PATHOLOGY AND TREATMENT OF CHILDBED,

for Students and Practitioners. Translated, with the consent of the author, from the Second German Edition, by James Read Chadwick, M. D. In one octavo volume. (*Preparing.*)

BRYANT (*THOMAS*), *F.R.C.S.*,
Surgeon to Guy's Hospital.

THE PRACTICE OF SURGERY. With over Five Hundred Engravings on Wood. In one large and very handsome octavo volume of nearly 1000 pages, cloth, $6 25; leather, raised bands, $7 25. (*Lately Published.*)

Again, the author gives us his own practice, his own beliefs, and illustrates by his own cases, or those treated in Guy's Hospital. This feature adds joint emphasis, and a solidity to his statements that inspire confidence. One feels himself almost by the side of the surgeon, seeing his work and hearing his living words. The views, etc., of other surgeons are considered calmly and fairly, but Mr. Bryant's are adopted. Thus the work is not a compilation of other writings; it is not an encyclopædia, but the plain statements, on practical points, of a man who has lived and breathed and had his being in the richest surgical experience. The whole profession owe a debt of gratitude to Mr. Bryant, for his work in their behalf. We are confident that the American profession will give substantial testimonial of their feelings towards both author and publisher, by speedily exhausting this edition. We cordially and heartily commend it to our friends, and think that no live surgeon can afford to be without it.—*Detroit Review of Med. and Pharmacy*, August, 1873.

As a manual of the practice of surgery for the use of the student, we do not hesitate to pronounce Mr. Bryant's book a first-rate work. Mr. Bryant has a good deal of the dogmatic energy which goes with the clear, pronounced opinions of a man whose reflections and experience have moulded a character not wanting in firmness and decision. At the same time he teaches with the enthusiasm of one who has faith in his teaching; he speaks as one having authority, and herein lies the charm and excellence of his work. He states the opinions of others freely and fairly, yet it is no mere compilation. The book combines much of the merit of the manual with the merit of the monograph. One may recognize in almost every chapter of the ninety-four of which the work is made up the acuteness of a surgeon who has seen much, and observed closely, and who gives forth the results of actual experience. In conclusion we repeat what we stated at first, that Mr. Bryant's book is one which we can conscientiously recommend both to practitioners and students as an admirable work. —*Dublin Journ. of Med. Science*, August, 1873.

Mr. Bryant has long been known to the reading portion of the profession as an able, clear, and graphic writer upon surgical subjects. The volume before us is one eminently upon the practice of surgery and not one which treats at length on surgical pathology, though the views that are entertained upon this subject are sufficiently interspersed through the work for all practical purposes. As a text-book we cheerfully recommend it, feeling convinced that, from the subject-matter, and the concise and true way Mr. Bryant deals with his subject, it will prove a formidable rival among the numerous surgical text-books which are offered to the student.—*N. Y. Med. Record*, June, 1873.

This is, as the preface states, an entirely new book, and contains in a moderately condensed form all the surgical information necessary to a general practitioner. It is written in a spirit consistent with the present improved standard of medical and surgical science.—*American Journal of Obstetrics*, August, 1873

WELLS (*J. SOELBERG*),
Professor of Ophthalmology in King's College Hospital, &c.

A TREATISE ON DISEASES OF THE EYE. Second American, from the Third and Revised London Edition, with additions; illustrated with numerous engravings on wood, and six colored plates. Together with selections from the Test-types of Jaeger and Snellen. In one large and very handsome octavo volume of nearly 800 pages; cloth, $5 00; leather, $6 00. (*Lately Published.*)

The continued demand for this work, both in England and this country, is sufficient evidence that the author has succeeded in his effort to supply within a reasonable compass a full practical digest of ophthalmology in its most modern aspects, while the call for repeated editions has enabled him in his revisions to maintain its position abreast of the most recent investigations and improvements. In again reprinting it, every effort has been made to adapt it thoroughly to the wants of the American practitioner. Such additions as seemed desirable have been introduced by the editor, Dr. I. Minis Hays, and the number of illustrations has been largely increased. The importance of test-types as an aid to diagnosis is so universally acknowledged at the present day that it seemed essential to the completeness of the work that they should be added, and as the author recommends the use of those both of Jaeger and of Snellen for different purposes, selections have been made from each, so that the practitioner may have at command all the assistance necessary. Although enlarged by one hundred pages, it has been retained at the former very moderate price, rendering it one of the cheapest volumes before the profession.

A few notices of the previous edition are subjoined.

On examining it carefully, one is not at all surprised that it should meet with universal favor. It is, in fact, a comprehensive and thoroughly practical treatise on diseases of the eye, setting forth the practice of the leading oculists of Europe and America, and giving the author's own opinions and preferences, which are quite decided and worthy of high consideration. The third English edition, from which this is taken, having been revised by the author, comprises a notice of all the more recent advances made in ophthalmic science. The style of the writer is lucid and flowing, therein differing materially from some of the translations of Continental writers on this subject that are in the market. Special pains are taken to explain, at length, those subjects which are particularly difficult of comprehension to the beginner, as the use of the ophthalmoscope, the interpretation of its images, etc. The book is profusely and ably illustrated, and at the end are to be found 16 excellent colored ophthalmoscopic figures, which are copies of some of the plates of Liebreich's admirable atlas.—*Kansas City Med. Journ.*, June, 1874.

LAURENCE (*JOHN Z.*), *F.R.C.S.*,
Editor of the Ophthalmic Review, &c.

A HANDY-BOOK OF OPHTHALMIC SURGERY, for the use of Practitioners. Second Edition, revised and enlarged. With numerous illustrations. In one very handsome octavo volume, cloth, $3 00.

For those, however, who must assume the care of diseases and injuries of the eye, and who are too much pressed for time to study the classic works on the subject, or those recently published by Stellwag, Wells, Bader, and others, Mr. Laurence will prove a safe and trustworthy guide. He has described in this edition those novelties which have secured the confidence of the profession since the appearance of his last. The volume has been considerably enlarged and improved by the revision and additions of its author, expressly for the American edition.—*Am. Journ. Med. Sciences*, Jan. 1870.

THOMPSON (SIR HENRY),
Surgeon and Professor of Clinical Surgery to University College Hospital.

LECTURES ON DISEASES OF THE URINARY ORGANS. With illustrations on wood. Second American from the Third English Edition. In one neat octavo volume. Cloth, $2 25. (*Now Ready.*)

My aim has been to produce in the smallest possible compass an epitome of practical knowledge concerning the nature and treatment of the diseases which form the subject of the work; and I venture to believe that my intention has been more fully realized in this volume than in either of its predecessors.—*Author's Preface.*

By a change in the typographic arrangement, the very considerable additions of the author have been accommodated with but little increase of size, and the work has been kept at its former very moderate price.

BY THE SAME AUTHOR.

ON THE PATHOLOGY AND TREATMENT OF STRICTURE OF THE URETHRA AND URINARY FISTULÆ. With plates and wood-cuts. From the third and revised English edition. In one very handsome octavo volume, cloth, $3 50. (*Lately Published.*)

This classical work has so long been recognized as a standard authority on its perplexing subjects that it should be rendered accessible to the American profession. Having enjoyed the advantage of a revision at the hands of the author within a few months, it will be found to present his latest views and to be on a level with the most recent advances of surgical science.

With a work accepted as *the* authority upon the subjects of which it treats, an extended notice would be a work of supererogation. The simple announcement of another edition of a work so well and favorably known by the profession as this before us, must create a demand for it from those who would keep themselves well up in this department of surgery.—*St. Louis Med. Archives*, Feb. 1870.

BY THE SAME AUTHOR. (*Just Issued.*)

THE DISEASES OF THE PROSTATE, THEIR PATHOLOGY AND TREATMENT. Fourth Edition, Revised. In one very handsome octavo volume of 355 pages, with thirteen plates, plain and colored, and illustrations on wood. Cloth, $3 75.

This work is recognized in England as the leading authority on its subject, and in presenting it to the American profession, it is hoped that it will be found a trustworthy and satisfactory guide in the treatment of an obscure and important class of affections.

WALES (PHILIP S.), M. D., Surgeon U. S. N.

MECHANICAL THERAPEUTICS: a Practical Treatise on Surgical Apparatus, Appliances, and Elementary Operations: embracing Minor Surgery, Bandaging, Orthopraxy, and the Treatment of Fractures and Dislocations. With six hundred and forty-two illustrations on wood. In one large and handsome octavo volume of about 700 pages: leather, $6 75.

TAYLOR (ALFRED S.), M.D.,
Lecturer on Med. Jurisp. and Chemistry in Guy's Hospital

MEDICAL JURISPRUDENCE. Seventh American Edition. Edited by JOHN J. REESE, M.D., Prof. of Med. Jurisp. in the Univ. of Penn. In one large octavo volume of nearly 900 pages. Cloth, $5 00; leather, $6 00. (*Just Issued.*)

In preparing for the press this *seventh* American edition of the "Manual of Medical Jurisprudence" the editor has, through the courtesy of Dr. Taylor, enjoyed the very great advantage of consulting the sheets of the new edition of the author's larger work, "The Principles and Practice of Medical Jurisprudence," which is now ready for publication in London. This has enabled him to introduce the author's latest views upon the topics discussed, which are believed to bring the work fully up to the present time.

The notes of the former editor, Dr. Hartshorne, as also the numerous valuable references to American practice and decisions by his successor, Mr. Penrose, have been retained, with but few slight exceptions; they will be found inclosed in brackets, distinguished by the letters (H.) and (P.). The additions made by the present editor, from the material at his command, amount to about one hundred pages; and his own notes are designated by the letter (R.).

Several subjects, not treated of in the former edition, have been noticed in the present one, and the work, it is hoped, will be found to merit a continuance of the confidence which it has so long enjoyed as a standard authority.

BY THE SAME AUTHOR. (*Now Ready.*)

THE PRINCIPLES AND PRACTICE OF MEDICAL JURISPRUDENCE. Second Edition, Revised, with numerous Illustrations. In two large octavo volumes, cloth, $10 00; leather, $12 00.

This great work is now recognized in England as the fullest and most authoritative treatise on every department of its important subject. In laying it, in its improved form, before the American profession, the publisher trusts that it will assume the same position in this country.

TUKE (DANIEL HACK), M.D.,

Joint author of "The Manual of Psychological Medicine," &c.

ILLUSTRATIONS OF THE INFLUENCE OF THE MIND UPON THE BODY IN HEALTH AND DISEASE.

Designed to illustrate the Action of the Imagination. In one handsome octavo volume of 416 pages, cloth, $3 25. (*Just Issued.*)

The object of the author in this work has been to show not only the effect of the mind in causing and intensifying disease, but also its curative influence, and the use which may be made of the imagination and the emotions as therapeutic agents. Scattered facts bearing upon this subject have long been familiar to the profession, but no attempt has hitherto been made to collect and systematize them so as to render them available to the practitioner, by establishing the several phenomena upon a scientific basis. In the endeavor thus to convert to the use of legitimate medicine the means which have been employed so successfully in many systems of quackery, the author has produced a work of the highest freshness and interest as well as of permanent value.

BLANDFORD (G. FIELDING), M.D., F.R.C.P.,

Lecturer on Psychological Medicine at the School of St. George's Hospital, &c.

INSANITY AND ITS TREATMENT: Lectures on the Treatment, Medical and Legal, of Insane Patients.

With a Summary of the Laws in force in the United States on the Confinement of the Insane. By ISAAC RAY, M.D. In one very handsome octavo volume of 471 pages; cloth, $3 25.

This volume is presented to meet the want, so frequently expressed, of a comprehensive treatise, in moderate compass, on the pathology, diagnosis, and treatment of insanity. To render it of more value to the practitioner in this country, Dr. Ray has added an appendix which affords information, not elsewhere to be found in so accessible a form, to physicians who may at any moment be called upon to take action in relation to patients.

It satisfies a want which must have been sorely felt by the busy general practitioners of this country. It takes the form of a manual of clinical description of the various forms of insanity, with a description of the mode of examining persons suspected of insanity. We call particular attention to this feature of the book, as giving it a unique value to the general practitioner. If we pass from theoretical considerations to descriptions of the varieties of insanity as actually seen in practice and the appropriate treatment for them, we find in Dr. Blandford's work a considerable advance over previous writings on the subject. His pictures of the various forms of mental disease are so clear and good that no reader can fail to be struck with their superiority to those given in ordinary manuals in the English language or (so far as our own reading extends) in any other.—*London Practitioner*, Feb. 1871.

WINSLOW (FORBES), M.D., D.C.L., &c.

ON OBSCURE DISEASES OF THE BRAIN AND DISORDERS OF THE MIND;

their incipient Symptoms, Pathology, Diagnosis, Treatment, and Prophylaxis. Second American, from the third and revised English edition. In one handsome octavo volume of nearly 600 pages, cloth, $4 25.

LEA (HENRY C.).

SUPERSTITION AND FORCE: ESSAYS ON THE WAGER OF LAW, THE WAGER OF BATTLE, THE ORDEAL, AND TORTURE.

Second Edition, Enlarged. In one handsome volume royal 12mo. of nearly 500 pages; cloth, $2 75. (*Lately Published.*)

We know of no single work which contains, in so small a compass, so much illustrative of the strangest operations of the human mind. Foot-notes give the authority for each statement, showing vast research and wonderful industry. We advise our *confrères* to read this book and ponder its teachings.—*Chicago Med. Journal*, Aug. 1870.

As a work of curious inquiry on certain outlying points of obsolete law, "Superstition and Force" is one of the most remarkable books we have met with.—*London Athenæum*, Nov. 3, 1866.

He has thrown a great deal of light upon what must be regarded as one of the most instructive as well as interesting phases of human society and progress. . The fulness and breadth with which he has carried out his comparative survey of this repulsive field of history [Torture], are such as to preclude our doing justice to the work within our present limits. But here, as throughout the volume, there will be found a wealth of illustration and a critical grasp of the philosophical import of facts which will render Mr. Lea's labors of sterling value to the historical student.—*London Saturday Review*, Oct. 8, 1870.

As a book of ready reference on the subject, it is of the highest value.—*Westminster Review*, Oct. 1867.

BY THE SAME AUTHOR. (*Lately Published.*)

STUDIES IN CHURCH HISTORY—THE RISE OF THE TEMPORAL POWER—BENEFIT OF CLERGY—EXCOMMUNICATION.

In one large royal 12mo. volume of 516 pp. cloth, $2 75.

The story was never told more calmly or with greater learning or wiser thought. We doubt, indeed, if any other study of this field can be compared with this for clearness, accuracy, and power.—*Chicago Examiner*, Dec. 1870.

Mr. Lea's latest work, "Studies in Church History," fully sustains the promise of the first. It deals with three subjects—the Temporal Power, Benefit of Clergy, and Excommunication, the record of which has a peculiar importance for the English student, and is a chapter on Ancient Law likely to be regarded as final. We can hardly pass from our mention of such works as these—with which that on "Sacerdotal Celibacy" should be included—without noting the literary phenomenon that the head of one of the first American houses is also the writer of some of its most original books.—*London Athenæum*, Jan. 7, 1871.

Mr. Lea has done great honor to himself and this country by the admirable works he has written on ecclesiological and cognate subjects. We have already had occasion to commend his "Superstition and Force" and his "History of Sacerdotal Celibacy." The present volume is fully as admirable in its method of dealing with topics and in the thoroughness—a quality so frequently lacking in American authors—with which they are investigated.—*N. Y. Journal of Psychol. Medicine*, July, 1870.

INDEX TO CATALOGUE.

PAGE

American Journal of the Medical Sciences . 1
Abstract, Half-Yearly, of the Med Sciences . 3
Anatomical Atlas, by Smith and Horner . 6
Anderson on Diseases of the Skin . 20
Ashton on the Rectum and Anus . 28
Attfield's Chemistry . 10
Ashwell on Diseases of Females . 23
Ashhurst's Surgery . 27
Barnes on Diseases of Women . 23
Bellamy's Surgical Anatomy . 7
Bryant's Practical Surgery . 29
Bloxam's Chemistry . 11
Blandford on Insanity . 31
Basham on Renal Diseases . 18
Brinton on the Stomach . 17
Bigelow on the Hip . 28
Barlow's Practice of Medicine . 14
Bowman's (John E.) Practical Chemistry . 11
Bowman's (John E.) Medical Chemistry . 11
Bumstead on Venereal . 19
Bumstead and Cullerier's Atlas of Venereal . 19
Carpenter's Human Physiology . 8
Carpenter's Comparative Physiology . 8
Carpenter on the Use and Abuse of Alcohol . 13
Carson's Synopsis of Materia Medica . 13
Chambers on Diet and Regimen . 16
Chambers on the Indigestions . 16
Chambers's Restorative Medicine . 16
Christison and Griffith's Dispensatory . 13
Churchill's System of Midwifery . 25
Churchill on Puerperal Fever . 23
Condie on Diseases of Children . 21
Cooper's (B. B.) Lectures on Surgery . 26
Cullerier's Atlas of Venereal Diseases . 19
Cyclopedia of Practical Medicine . 15
Dalton's Human Physiology . 9
Davis' Clinical Lectures . 14
De Jongh on Cod-Liver Oil . 13
Dewees on Diseases of Females . 23
Dewees on Diseases of Children . 20
Druitt's Modern Surgery . 28
Dunglison's Medical Dictionary . 4
Dunglison's Human Physiology . 9
Dunglison on New Remedies . 13
Ellis's Medical Formulary, by Smith . 13
Erichsen's System of Surgery . 28
Fenwick's Diagnosis . 14
Flint on Respiratory Organs . 17
Flint on the Heart . 17
Flint's Practice of Medicine . 15
Flint's Essays . 15
Fownes's Elementary Chemistry . 10
Fox on Diseases of the Stomach . 17
Fuller on the Lungs, &c. . 17
Green's Pathology and Morbid Anatomy . 14
Gibson's Surgery . 26
Gluge's Pathological Histology, by Leidy . 14
Galloway's Qualitative Analysis . 10
Gray's Anatomy . 6
Griffith's (R. E.) Universal Formulary . 13
Gross on Foreign Bodies in Air-Passages . 26
Gross's Principles and Practice of Surgery . 26
Guersant on Surgical Diseases of Children . 20
Hamilton on Dislocations and Fractures . 27
Hartshorne's Essentials of Medicine . 16
Hartshorne's Conspectus of the Medical Sciences 5
Hartshorne's Anatomy and Physiology . 7
Heath's Practical Anatomy . 7
Hoblyn's Medical Dictionary . 4
Hodge on Women . 23
Hodge's Obstetrics . 24
Hodges' Practical Dissections . 6
Holland's Medical Notes and Reflections . 14
Horner's Anatomy and Histology . 6
Hudson on Fevers . 18
Hill on Venereal Diseases . 19
Hillier's Handbook of Skin Diseases . 20
Jones and Sieveking's Pathological Anatomy . 14

PAGE

Jones (C. Handfield) on Nervous Disorders . 18
Kirkes' Physiology . 8
Knapp's Chemical Technology . 11
Lea's Superstition and Force . 31
Lea's Studies in Church History . 31
Lincoln on Electro Therapeutics . 19
Leishman's Midwifery . 25
La Roche on Yellow Fever . 14
La Roche on Pneumonia, &c. . 17
Laurence and Moon's Ophthalmic Surgery . 29
Lawson on the Eye . 28
Laycock on Medical Observation . 14
Lehmann's Physiological Chemistry, 2 vols. . 5
Lehmann's Chemical Physiology . 5
Ludlow's Manual of Examinations . 4
Lyons on Fever . 18
Maclise's Surgical Anatomy . 7
Marshall's Physiology . 8
Medical News and Library . 2
Meigs's Lectures on Diseases of Women . 23
Meigs on Puerperal Fever . 23
Miller's Practice of Surgery . 26
Miller's Principles of Surgery . 26
Montgomery on Pregnancy . 25
Neill and Smith's Compendium of Med. Science . 5
Neligan's Atlas of Diseases of the Skin . 20
Neligan on Diseases of the Skin . 20
Obstetrical Journal . 22
Odling's Practical Chemistry . 10
Pavy on Digestion . 16
Pavy on Food . 16
Parrish's Practical Pharmacy . 12
Pirrie's System of Surgery . 27
Pereira's Mat. Medica and Therapeutics, abridged 13
Quain and Sharpey's Anatomy, by Leidy . 8
Roberts on Urinary Diseases . 18
Ramsbotham on Parturition . 25
Rigby's Midwifery . 25
Royle's Materia Medica and Therapeutics . 13
Swayne's Obstetric Aphorisms . 24
Sargent's Minor Surgery . 28
Sharpey and Quain's Anatomy, by Leidy . 6
Skey's Operative Surgery . 26
Slade on Diphtheria . 18
Smith (J. L.) on Children . 21
Smith (H. H.) and Horner's Anatomical Atlas . 6
Smith (Edward) on Consumption . 17
Smith on Wasting Diseases of Children . 21
Stillé's Therapeutics . 13
Sturges on Clinical Medicine . 14
Stokes on Fever . 14
Tanner's Manual of Clinical Medicine . 5
Tanner on Pregnancy . 24
Taylor's Medical Jurisprudence . 30
Taylor's Principles and Practice of Med Jurisp. 30
Tuke on the Influence of the Mind . 31
Thomas on Diseases of Females . 22
Thompson on Urinary Organs . 30
Thompson on Stricture . 30
Thompson on the Prostate . 30
Todd on Acute Diseases . 14
Wales on Surgical Operations . 26
Walshe on the Heart . 13
Watson's Practice of Physic . 15
Wells on the Eye . 29
West on Diseases of Females . 22
West on Diseases of Children . 21
West on Nervous Disorders of Children . 21
What to Observe in Medical Cases . 14
Williams on Consumption . 17
Wilson's Human Anatomy . 7
Wilson on Diseases of the Skin . 20
Wilson's Plates on Diseases of the Skin . 20
Wilson's Handbook of Cutaneous Medicine . 20
Winslow on Brain and Mind . 31
Wöhler's Organic Chemistry . 13
Winckel on Childbed . 4
Zeissl on Venereal . 19

FOR "THE OBSTETRICAL JOURNAL" FIVE DOLLARS a year, see p. 22.

LANE MEDICAL LIBRARY

To avoid fine, this book should be returned on
or before the date last stamped below.

AUG -4 1932
APR 20 1935

T71 Wilson, Sir E.
W74 On diseases of the
1868 skin.

27007

NAME	DATE DUE
S.C. Way	AUG -4 1932
Alameda Co. Med. Lib.	APR 20 [illegible]

27007